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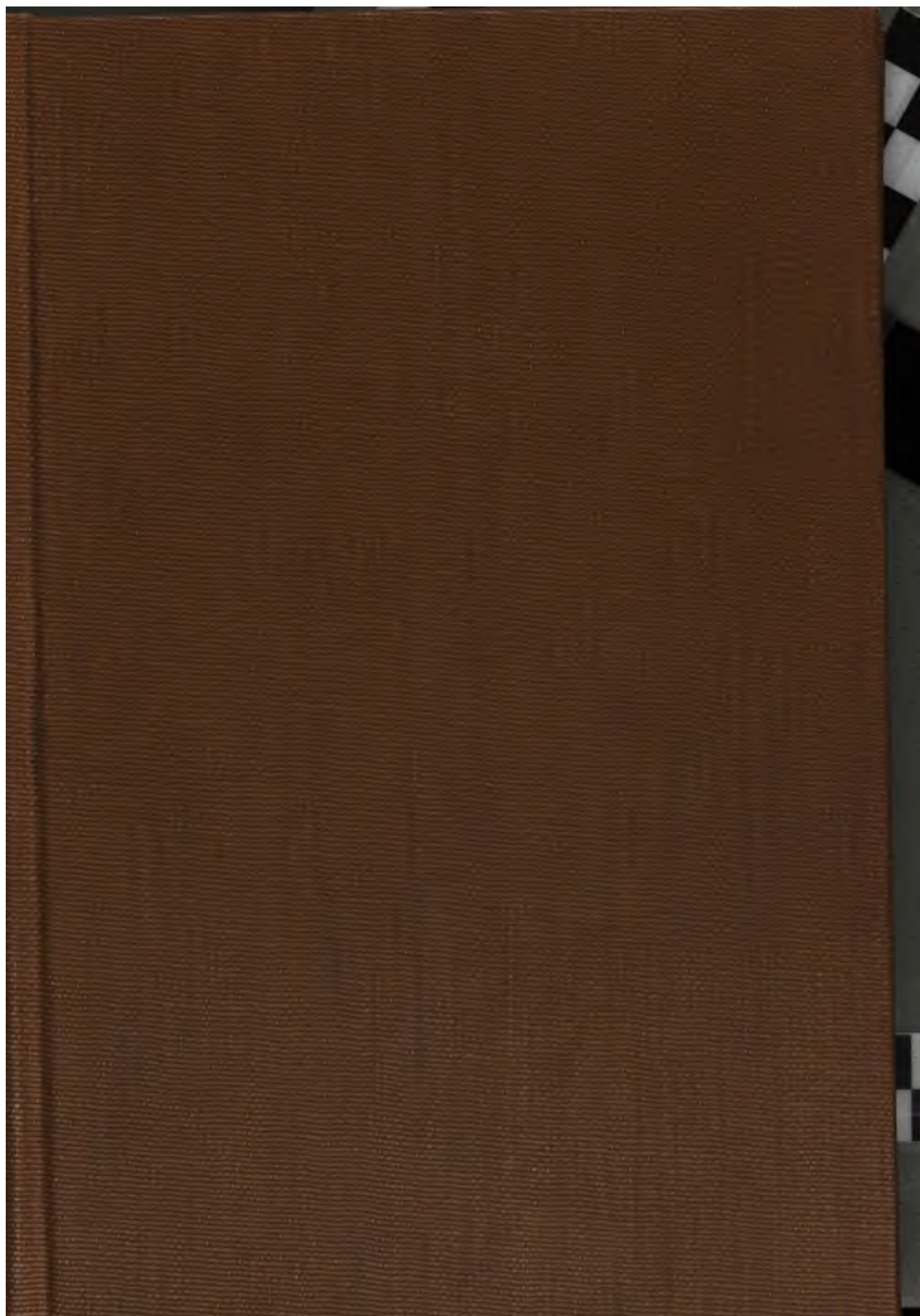
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THE  
*American Antiquarian*

—AND—

*Oriental Journal*

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VOLUME XXV.

JANUARY-NOVEMBER, 1903.

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REV. STEPHEN D. PEET, PH. D., EDITOR.

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# American Antiquarian

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No. I.

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## RUINED CITIES IN CENTRAL AMERICA.

BY STEPHEN D. PEET.

The study of the native architecture of the New World has brought us at last into the midst of the ancient cities of Central America. These are proving to be far more numerous than has been supposed, but in treating of them we shall take only those which are the most prominent.

These ruined cities are all characterized by the same features. There is to be seen in each a large quadrangular building which is supposed to be the palace. Near it are generally several temples or shrines situated on lofty pyramids with stairways leading to them. In some of them there is a circular or conical building called the castle or caracol which is centrally located, and may have served as a shrine or temple. It has spiral stairways, winding around a central core or column, and is somewhat conspicuous. In most of the cities there is a large building which is supposed to have been used as a religious house, and is called the Nunnery. In some of the cities is what is called the Gymnasium or Tennis Court, suggesting the idea that the people who dwelt in the city were given to amusement, and lived in luxury. There are Courts and Plazas in each of the cities which were probably paved; some of them were surrounded by corridors, and were adorned with many statues, and altars in front of the statues.

The cities were situated near a stream or a great well, and depended upon these for their supply of water.

Such are the general features; but there are variations in the style of decoration and in the religious symbols, which show that each city was ruled over by a different king, and a different class of priests, and had its own peculiar style of ornament and religious symbols. The palaces and temples are always the most prominent in every city, and are noticeable because of the peculiar decorations and carvings which are seen upon their facades; and because of the many portrait columns which are near them.

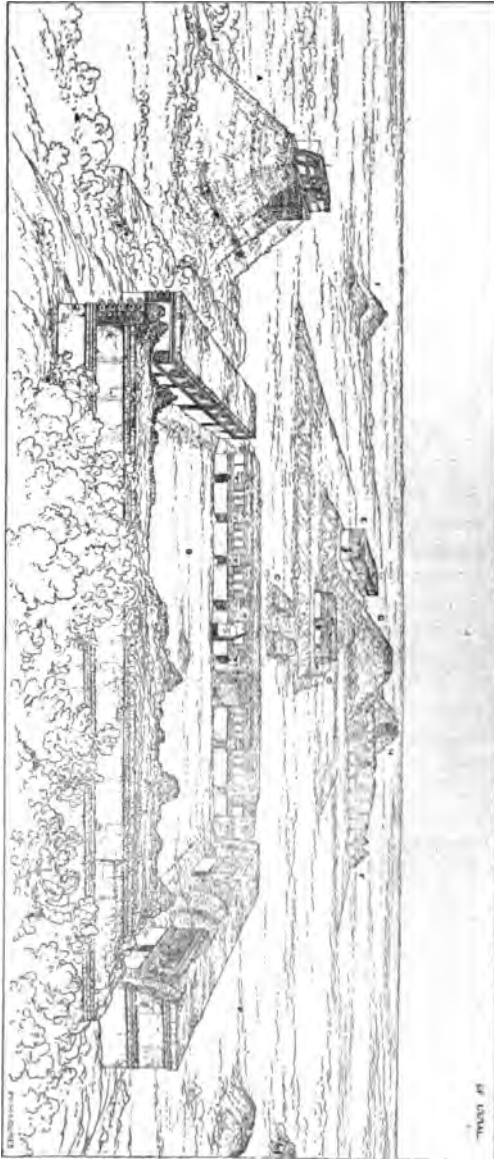
The locality where the greatest number of ruined cities is to be found is in the Peninsula of Yucatan. Here are the well known cities of Uxmal, Chichen-Itza, Kabah, Izamal, Merida, and further to the west, Palenque and Lorillard, a city



which has been described by Charnay, and further to the south west in Guatemala, the famous city of Copan. The physical geography of this region is very different from that of Mexico.

There are no rivers, and the few small streams along the coast extend but a few miles inland. The Maya race which occupied this region, was a quiet, peaceful though brave people, living simply on the products of the forests, each community taking but little interest in the affairs of the world away from their own immediate neighborhood. Yucatan presents a rich field for antiquarian exploration, and furnishes finer and more numerous specimens of ancient aboriginal architecture and sculpture than have been discovered in any other part of America. The state is literally dotted with the ruins of edifices. Fifty or sixty different localities have been visited by different explorers, and described as full of ruins that have a remarkable resemblance to one another. Among the explorers may be

PALACES AND TEMPLES AT UXMAL.



mentioned Waldeck Stephens and Catherwood, Norman, Charnay, Maudsley, and more recently Seler, Maler, Thompson. W. H. Holmes, and the parties sent out by the Peabody Museum

and the Museum of Natural History New York.

For convenience, the ruins can be divided into four groups, the northern group, including Ake, Izamal, Merida, Mayapan; the central group, including Uxmal, Kabah, Labna, and nineteen other localities; the eastern group, the ruins of Chichen-Itza; the western group found in Guatemala and Honduras, including Copan, which is one of the most famous of American ruins.

1. We begin with Uxmal, a city which presents a great variety of structures, some of which were designed for palaces, others for religious houses. All of them represent the architectural style of the Mayas; some of which have been already described.

Mr. Holmes says:

"There were five great structures that take rank as specimens of Maya architecture. These are, the Temple of the Magician, (A) the Quadrangle, (B) called the Nunnery, the House of the Turtle, (C) the House of the Pigeons, (F) and the Governor's Palace (E). Certain features of material, construction, plan, and ornament are common to all. The stone used is the pale yellowish, and reddish gray lime stone of the locality, and was set in mortar,



PALACE AND TEMPLES AT UXMAL.

the walks were thick, averaging perhaps three feet, and divided nearly midway by mouldings of a prevailing type, into an upper and lower zone, the entablature decorated with composite sculptures, shoe shaped coping stones, and level roof. There are no windows. The doorways are confined to the lower or plain zone of the wall; they occur singly, the great portals with columns not being seen at Uxmal. The jams are faced with cut stones like that of the walls, the lintels are of zepote wood. The plan of the buildings usually takes the form of a long narrow rectangle with two ranges of rooms, four such buildings surrounding a court, thus forming quadrangle. None of the buildings are over one story in height; nearly all are built on terraces; the apartments are all of good size and height, and the vaulted ceilings are formed of the usual wedge-shaped arch constructed of horizontally placed stones, beveled with a slope. Stairways were numer-

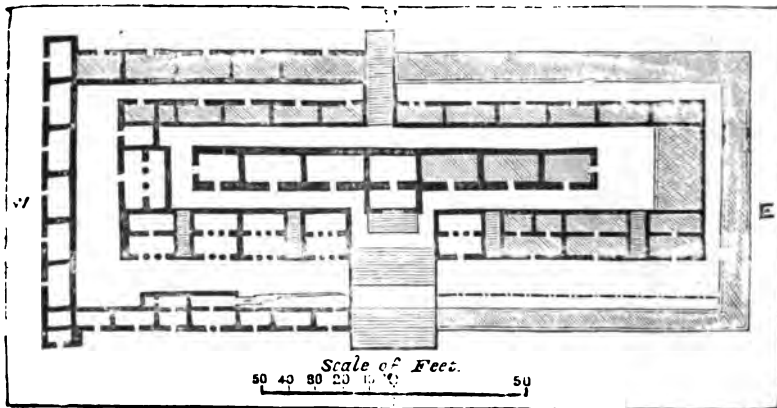
\*The cut is taken from Charnay's book *Ancient Cities of the New World*.

us, wide, and of stone, and were usually quite steep. A common feature of the court was a standing stone or picket.

The Temple of the Magicians is the most notable in the group, and is first to catch the eye of the visitor. The steep pyramid supports upon its summit, a ruined building, and upon the western face near the top, is a second structure of remarkable position and appearance. The height of the pyramid is upward of 80 feet, the length is 240 feet, and the width 160 feet. The temple that crowns the summit is some 70 feet long, and 12 feet wide, and contains three rooms. The most striking feature is the temple built against the north side of the pyramid, having its roof on a level with the crest of the pyramid. The facade of this temple is the most ornate and composite piece of sculpture. The space above the doorway is occupied by a colossal face or mask, some twelve feet square, worked out in a wonderful manner. The corner decorations comprise smaller masks, seven in each tier. The exterior wall surfaces of this temple are entirely covered with these ornaments. The pilasters are placed at the sides of the doorway, and the lintels consist of three strong beams.

The Nunnery Quadrangle is one of the best known specimens of Maya architecture. Four great rectangular structures, low heavy and formal, stand upon a broad terrace in a quadrangle, their ornate fronts facing inward.

Examining the various motives, we find the great snouted mask was



PLAN OF TEMPLE.

the favorite, and is found in all the fronts. Next to the mask design is the serpent which appears in the east, west, and north fronts. The colossal feathered serpent on the west, enclosing panels and intertwined facade is a most effective piece of work, and must be regarded as a masterpiece of decorative sculpture. In the front of the eastern building are four ornaments, consisting of five parallel bars of double headed serpents, and near the top a colossal human head. In the north front, the same conventional serpent occurs in pairs, and in varied forms. The life size, or colossal human figures in the round, form a fourth group of motives. They were centerpieces in decorative fields. The apron shield placed at intervals along the frieze forms a fifth class of decorative elements. Human figures in high relief and phallic symbols occur on the exterior walls of the north building."

The Gymnasium or Tennis Court, is another structure which is found here and at Chichen-Itza, built upon the general level of the site. It is composed of two massive walls or oblong piles of masonry ninety feet long, twenty feet high, and twenty feet thick, according to Stephen's measurements. Mr. Holmes thinks they were so thick because they were designed as audience places.



The Governor's Palace is near the Ball Court. Mr. Holme's says:

"This superb building is justly regarded as the most important single structure of its class in Yucatan. It is extremely simple in plan and outline and measures 320 feet long, 40 feet wide, and 25 feet high. It is divided into three parts, a long middle section, and two short ones, by transverse archways. The front wall is pierced by nine principal doorways, the west wall is unbroken save by two archways and presents a facade of rare beauty. The wall is nine feet thick nearly the whole length, and increases to twelve or thirteen feet at the level of the capstones of the interior arches. The rooms rarely exceed ten or twelve feet in width, but they are all arched. The length reaches sixty feet in two cases. The included belt of sculptures is about ten feet wide, and extends entirely around the building. It is therefore, 720 feet long, and includes in its ornamentation 20 000 stones, all of which are sculptured and individual in shape.



ANIMAL HEADED THRONE.

There are several motives, viz., the mask the fret and the lattice, horizontal bars terminating in serpent heads, the elaborate masks showing curved snouts, deep eyes, square ear ornaments, serpent brow band, stella ornament. The arches in this building are the most remarkable in the country. As seen from the west this building is truly a wonderful creation, and set high above the plane upon its stable terraces, it must have been a residence worthy of any barbarian ruler or potentate. The most novel and striking features of the building are the two high pointed archways, which from their deep recesses extend from roof to floor. These arches are the most remarkable in the country; each is 25 feet long, 10 feet wide and 20 feet high. The spring of the side walls begins near the floor and extends to the steep sidewalls above."



The façades at Uxmal present a number of human figures some of which were finished in the round, one of them in a sitting posture, with the head crowned with a mass of plumes which were larger even than the body itself. This is represented in the cut, though the human figure has been destroyed.

It is to be noticed here, that all of the cities of Central America including Uxmal, Chichen, Palenque, and others



SEATED FIGURE WITH PLUMED HEAD DRESS.

a style which was evidently borrowed from their mythology as the serpent figure and Manitou Face were common. Still there were on many of the palaces plumed figures and statues which represented royal personages, while in the temples were tablets which taught religious lessons.

The House of the Pigeons is another unique structure. It may appropriately be called the Quadrangle of the Nine Gables, for it bears upon its roof a colossal comb in the shape of gables built of masonry at an enormous expenditure of time and labor, each of the gables perforated with thirty rectangular window-like openings in seven horizontal rows. From the face of these gables are seen projecting stones, and there can be little doubt that this colossal comb was built for the purpose of embellishing the building, and holding aloft its sculptured ornaments.

In front of the Governor's house eighty feet from the stairway Stephens found a picote which was probably used as a sun dial, and sixty feet further east the double headed animal throne shown in the cut.

The object of this is unknown, but it may have been a throne on which the sun was supposed to sit.\*

In the same region, ten or twelve miles from Uxmal, is an ancient city called Kabah, concerning which very little is known. Sixteen different structures were discovered here by Mr. Stephens, located in a space about 2,000 x 3,000 feet. Mr. Charnay also visited the same locality, and described it as follows:

"Kabah was an important city, to judge from its monuments, consisting of high pyramids, immense terraces, triumphal arches and stately palaces. One palace is so richly decorated that the architecture entirely disappears under it. Two salient cornices form a frame to immense friezes, which in their details would compare to our proudest monuments. The interior has a double range of apartments, the finest we have yet seen, supported by half arches of overlapping stone. One of the inner chambers is entered from the front by three steps cut from a solid stone, the lowest step taking the form of a scroll. All the apartments had their walls painted with figures which were of brilliant colors, and which must have greatly enhanced the striking effect produced by this semi-barbarous, yet with-all magnificent edifice.

The second Palace is likewise reared on a pyramid. Its outer walls are plain except three short groups of pilasters, each surrounding the edifice above the cornice, forming a sloping, rather than a perpendicular frieze. The front is pierced by seven openings; two have columns and primitive rude capitals. The ornamental wall narrows toward the top, and is distinctly seen through the vegetation covering the roofs. There are remarkable bas reliefs at Kabah that represent a conqueror in rich Yucatee costume, receiving the sword of a captive Aztec."

On the Island of Cozumel in the vicinity, a small temple contained a grotesque doorway which differed from any other. It consisted of a series of supports with two heavy stone lintels, but in the middle, supporting the lintels was a column with a capital, and carved upon the column was a kneeling figure in a distressed attitude as though bearing up a heavy weight, thus making a caryatid.

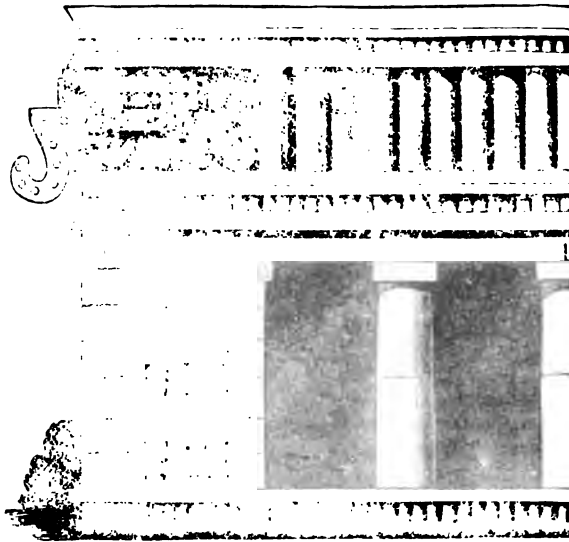
At Zayi, is a ruined city, of which the principal edifice is called the Casa Grande. It is built in three receding stories. A stairway, 32 feet wide leads up to the third story on the

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\*This has been described in my work on Myths and Symbols.

front, and a narrower stairway to the second platform on the rear. The portion of the front is shown in the cut. Ranges of pillars or pilasters compose the bulk of the ornamentation, both above and below the cornice. The lintels are of stone, and many of the doorways are of triple width, in which cases the lintel is supported by two rudely formed columns, about six and a-half feet high, with square capitals. The only other monument is an immense terrace about 1,500 feet square, a building reached by steps, the interior wall decorated with a row of pilasters.

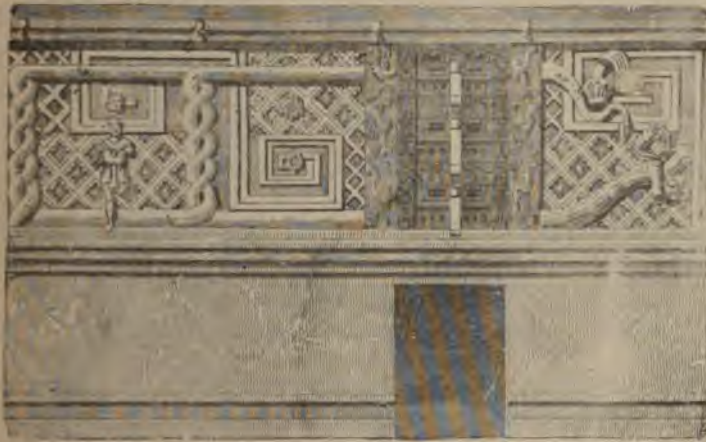
At Labna, are ruins of buildings equal in extent and magnificence any in Yucatan. In one case a mound of forty-five feet



in height supported a building 20x43 feet of the ordinary type. In the corner of this building is an ornament which presents the open mouth of an alligator or monster, from whose jaws looks out a human face, but along with it are other ornaments composed of grecques, rosettes, scrolls, and palm leaves.

II. The ruined city Chichen is next to be studied. This belongs to the same group with that of Uxmal, Kabah and Izamal, but has some features which are not found elsewhere. In the first place it is built on a plain which is remote from any stream, and is surrounded by a sandy plain, but is supplied with water from two wells or cenotes, which are sunken in the rocks, both of which were sacred. The city abounds with pyramids which resemble those at Uxmal, Palenque, and other cities of that region, upon which Temples, Palaces and other buildings were erected. There are over a dozen temples in various stages of ruin, all of them decorated with the same barbaric ornaments which are found in the other cities of the region. The Temple called El Castillo or Castle, and the Temple of Tigers are the most notable. Another peculiarity of the city is that it abounds with columns, and in this respect differs from Uxmal, but resembles those at Cozumel, at Zich-

mook, at Zayi, Labna, and Copan. The chief peculiarity is that the serpent is so conspicuous in its ornamentation. We have seen that the serpent was an ornament in the façade of the Palace at Uxmal and at Kabah, but here it was sculptured not only upon the façades of the various buildings but served as balustrades for the stairways that led to the temple; its body formed the columns which stood at the doors of the temple, the head and tail serving as the base and capital for the columns. It also took the place of the snouted mask or Manitou Face, which was so prominent at Uxmal. Its head projected beyond the corners very much as the hooked ornament that was common elsewhere. An explanation of this peculiarity



SERPENT FAÇADE AT UXMAL.

may possibly be found in the custom which was common farther north of taking some particular totem or a nature power for a guardian divinity, the serpent serving the same purpose here that the Manitou Face did at Uxmal, the Gigantic Human Face at Izamal, the portrait columns or stelæ, at Copan, and the various idols did at Zapatero.

There was in Mexico, as we have seen, an image which contained the combination of the human forms and human hands with serpent heads, tails and fangs, the whole decorated with a royal drapery. There were altars also at Copan which were as grotesque and forbidding as these serpent figures; while in the Usumatsintla Valley, according to the researches of Maler there were many human figures which were highly ornamented, each city apparently having its own peculiar style of ornamenting the temples and palaces, and its own models for sculpture; otherwise the description of Chichen-Itza is only a repetition of Uxmal, for a similar arrangement of buildings, general form of architecture, and form of government prevailed in each.



The columns were sometimes above the cornice and sometimes below; the serpent figure was sometimes seen on the facade, and again on the sides of the stairways. The statues and human heads and masks were placed above the cornice.

■The serpent balustrade at Chichen presents the same symbol as the serpent facade at Uxmal, and suggests the same mythology. The double headed serpent on the Casa de Monjas resembles the symbol which was so common on the northwest coast, and reminds us of the coat of arms which was common in Sumatra. These figures were generally placed over the



PALACE WITH COLUMNS AT KABAH.

doorways in all these regions, as they are over the doorways at Uxmal, and suggest a contact between the two continents though there is just difference enough between them to make it difficult to prove that they had a common origin.

The banded columns, however, are peculiar to Central America, but are very common there. A good specimen of these is seen in the cut which represents the palace at Kabah. Kabah seems to have been an important city; it consisted of high pyramids, immense terraces, triumphal arches, and stately

palaces. Charnay says: "The front of the first palace was richly decorated with figures like those at Chichen, calling to mind the gigantic wooden idols met with in the Islands of the

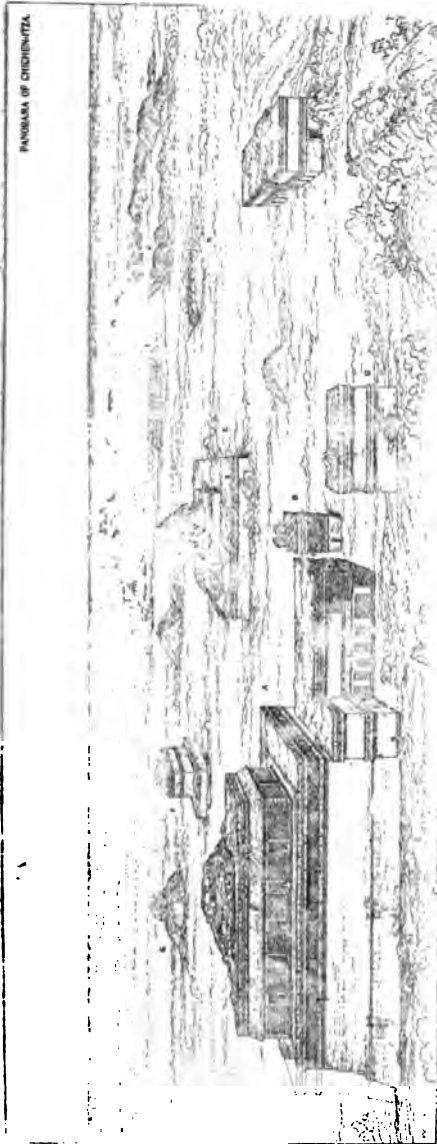
Pacific." The second palace is decorated with groups of three short pilasters arranged on the sloping frieze. Below the cornice are seven openings, two of which have columns and square capitals. The building seems to have had two stories; though the first is nearly buried under the debris which has fallen from the ruins.

Chichen, Mr Holmes says is the most important group in Yucatan. Although it has no single ornamentation to rival the Governor's Palace, or Nunnery Quadrangles at Uxmal, it outranks that city in the number and variety of its remains.

In plan and dimensions the buildings are greatly diversified. The pyramid temples, of which there are over a dozen in various stages of ruins, may be regarded as the prevailing type. The ground plans generally show very simple arrangements of corridors, vestibules or chambers. The most unique features are found in the "caracol" or the "round tower."

"The panoramic view presents in the foreground the group of the

Nunnery or Palace A, with its annexed buildings; B, and C. To the right of this is the box-like form of the Akab Tzib, D. Beyond and over the east end of the Palace is the



Caracol or Round Tower, E. To the left of this is the Red House, F; and beyond over the top of the temple is the ruined Pyramid Temple, G. Near the center of the picture is a small pyramid, and beyond this is the Ball Court, or Gymnasium, H. The Castle El Castillo, with its lofty stepped pyramid, I, is a little to the right. Still further on are two temple pyramids with extensive ruins, J. Two cenotes, one at K, in the middle of the picture, and the Sacred Cenote, L, about a mile from the point of view."

The Palace or Nunnery is the most notable building here. The main building is composite in character, and represents two or three successive stages or epochs of growth. The fine second story structure belongs to the original period of building, and it is surmised that the small crowning structure is of late date, possibly representing the latest stage of growth. In the decorative features this group of structures is of exceptional interest.\*

The most unique structure in Yucatan, is the caracol or Winding Stair, so-called because of a spiral passageway extending upward through the columnar central mass of the building. The ruin comprises three principal features, a wide foundation terrace, a small upper terrace, and a turret-like superstructure. The lower terrace measures about 220 feet from north to south, and 150 feet from east to west, and is 20 feet high. The stairway is on the west side, and bordered originally by balustrades, formed, as in other cases in Chichen, of colossal serpents with heads resting on the ground. The second terrace is some 60 or 80 feet in diameter, and 12 feet high; the ruined turret is 39 feet in diameter and nearly the same in height. The central core is about seven feet in diameter, and eight feet at the spring of the arch.

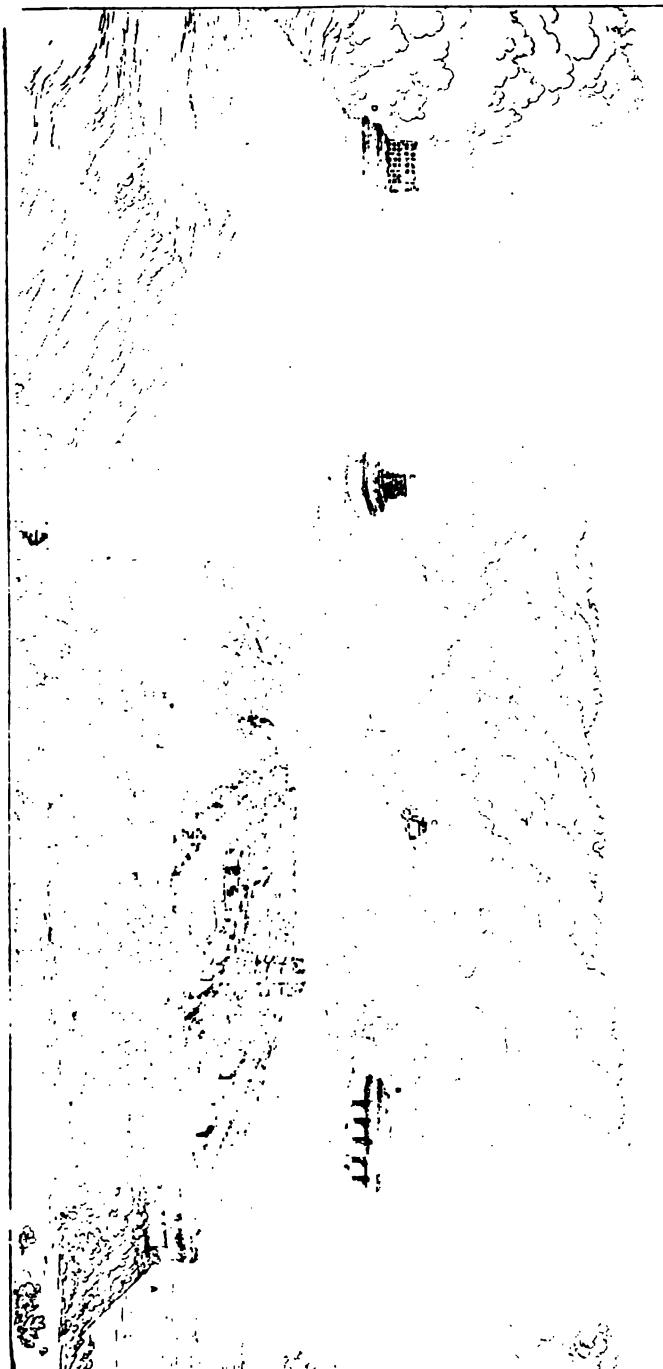
The El Castillo, or Castle, is the noblest monument of Chichen. It is a pyramid temple of the first order. It is as nearly as consistent a unit of building as can be found anywhere in the Maya countries.\* (The Temple of the Tigers has been described under the head of ancient temples).

III. The ruined city of Palenque, is perhaps the best known of all those found in Central America, and the literature concerning it is quite voluminous.

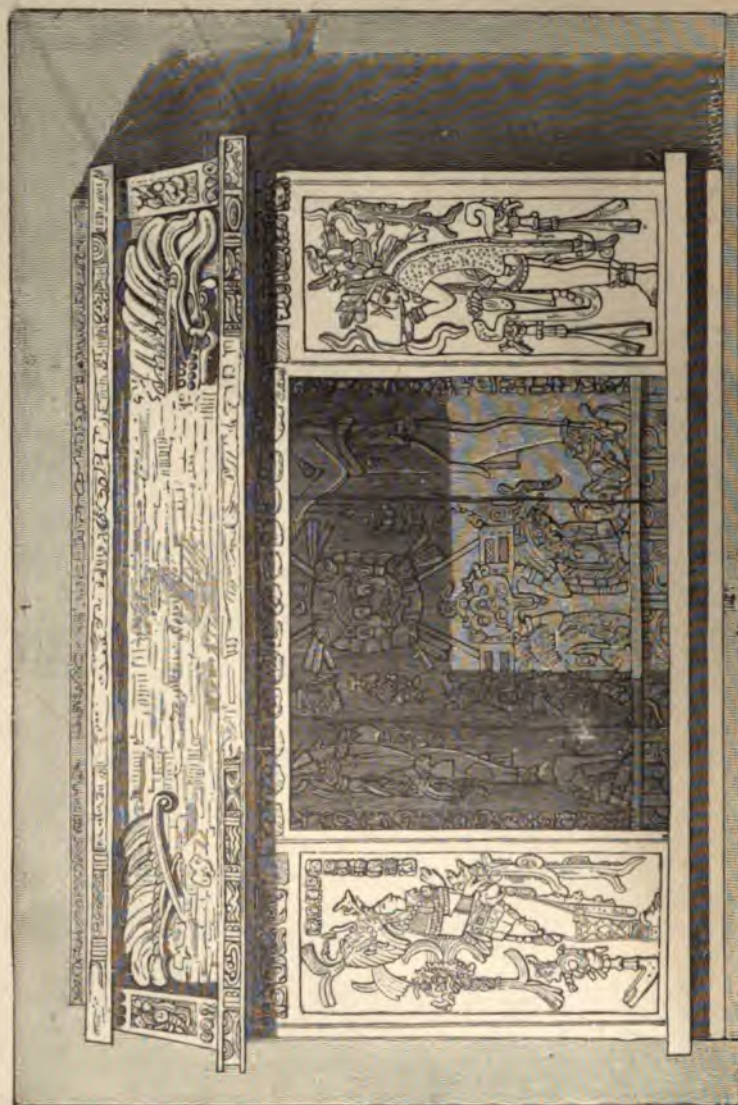
"The natural advantages of this region seem to have been fully appreciated by the aboriginal Americans, for here they erected one of the grandest cities, or religious centers, which as a ruin has become famous throughout the world. Since their discovery in the middle of the eighteenth century, the ruins have been carefully explored. Waldeck and Stephens are perhaps the best authorities, but the reports of Del Rio,

\*A cut representing this building with its decorations, may be seen in the chapter on "Ethnic Styles in American Architecture," page 245.

PANORAMA OF PUEBLO







TEMPLE OF THE SUN AT PALENQUE.

Dupaix, Galindo and Charnay, afford much valuable information."\*

Mr. W. H. Holmes has visited the spot and made an excellent panorama, and has described the buildings in detail. The peculiarity of the ruins is that they present one great palace with several temples surrounding it, giving the idea that it was the seat of power for one of the local chiefs or kings of the country, who with his priests ruled over the region, but made the temple a place of resort for all of the people surrounding, the symbols in the temples indicating that they were sun worshippers, and also deified the nature powers. There is no city



ARCHED CORRIDOR AT PALENQUE.

in Central America which furnishes more religious symbols, and certainly none that are so expressive.

"The Palace A, is seen in the foreground; beyond rises the lofty Temple of the Inscription, B; further up the stream, set in against the hill side, is the Temple of the Beau Relief C. At the left, across the gorge, are three buildings crowning as many pyramids; the first at the left is the Temple of the Cross, D, seen from the back; the second, to the right, is the Temple of the Sun, E, also seen from the back; and between these and a little further away is the Temple of the Cerro, or Cross No. 2 of Charnay, F. In the immediate foreground may be detected the arched opening, G, of the mysterious waterway through which the Otolum passes for several hundred feet."

\*The cut gives a clear idea of the doorway and the trefoil niches, but is defective in that it represents the niches as extending downward to the floor. The position of the medallions, the piers, the pavement, and the esplanade, are all shown in the cut.



The unique feature, at Palenque is the great cluster of buildings called the Palace, which consists of a remarkable elevation with quadrangular base, measuring 260x210 feet, 40 feet high, and sloping sides with traces of a broad central stairway on the north, the sides faced with regular blocks of hewn stone.

"The summit platform of the pyramid supports the palace which covers its whole extent save a narrow passage near the edge, the exterior dimensions of which are 180x228 feet, and



PALACE STAIRWAY AT PALENQUE.

30 feet high. The outer wall was pierced with about forty doorways, which gave the whole the appearance of a portico or corridor with wide piers. The double corridors present the form of an arch with a middle wall pierced by arched doorways which have a trefoil shape, and give to the entire structure an artistic appearance. The middle wall has a series of medallion-like heads, possibly portraits, neatly worked out in relief and surrounded with roundish framework. There are openings penetrating the middle wall to the right and left of the doorway, trefoil in shape above the medallions. The doorways are  $8\frac{1}{2}$  feet high by 9 feet wide. The whole exterior was covered with a coat of hard plaster, and there are some

traces of a projecting cornice that surrounded the building. This was pierced at regular intervals with small holes designed for the support of poles on which were curtain hangings, which served as screens for the doors.

The chief entrance to the palace was on the east, fronting the stream. Of the piers separating the doorways, only fifteen have been found standing, eight on the east and seven on the west. Each contains a bas relief in stucco representing human figures in various attitudes and having a variety of ornaments and insignia. The faces are all in profile, and the foreheads invariably flattened. This cranial form was undoubtedly the highest type of beauty in the eyes of the ancient artist. Many have believed that the builders of Palenque, were the priest



TEMPLE OF THE CROSS.

leaders of an extinct race. Their foreheads were naturally imitated by their descendants.\*

Passing through the doorway we enter the court, 70x80 feet, its pavement like other courts being eight or ten feet below that of the corridors. The court is bounded on the north and east by the walls or piers, of the inner corridor, and on the south and west by those of the interior buildings, C and D. The piers are yet standing, and each has a stucco bas-relief, though they are much damaged. Broad stairways of five or six steps lead down to the level of the court. The eastern stairway is thirty feet wide. On each side of it are sculptured stone slabs, inclined at about the same angle as the stairway, presenting in low relief a group of human figures in peculiar attitudes, all of them with retreating foreheads.

\*The custom of flattening the head prevailed among the tribes along the Gulf of Mexico at the time of the Discovery.



The temples or shrines of Palenque form the most interesting features of the group. These have been described by various explorers.

The panorama represents their location, relative size and appearance. The Temple of the Sun can be seen in the center of the panorama surrounded by two groups of platforms or pyramids; its roof cone rises high above the mansard roof.



TABLET OF THE BRAU RELIEF.

There are three tablets within it which give the name to the temple. The central tablet represents a hideous face or mask with protruding tongue, which is supposed to represent the sun. This mask is suspended to a sort of frame which stands on a kind of altar which is supported on the backs of two crouching human figures. Two priests stand on the backs of

other stooping men, and are in the act of making human offerings to the sun. The temple is so constructed that the mask, or face, is inside the shrine, which has a roof and cornice of its own, but receives the light through the doorway.

The Temple of the Cross (D) has the same shape as the Temple of the Sun, but instead of having a mask fixed to the wall, it contains the Tablet of the Cross composed of three stones, and represents two men clad in the insignia of their office, making an offering to a bird perched on the summit of the cross.†

Stephens says of the two priests, that they are well drawn,



STATUE OF TLALOC.

and in symmetry of proportion are perhaps equal to many that are carved on the ruined temples of Egypt. Their costume is in a different style from any heretofore given, and the fold would seem to indicate that they were of a soft pliable texture like cotton.

The Temple of the Beau Relief measures 18x20 feet

twenty-five feet high, and apparently fronts the east. It presents the peculiarity of an apartment in the pyramid immediately below the upper rooms. On the rear wall in the upper room is the Beau Relief in stucco, the finest piece of stucco work in America. It represents a chief seated upon a globe, the globe resting on an animal-headed throne. Mr. W. H. Holmes says that as a work of art this bas-relief would not suffer by comparison with representative relief sculptures of Egypt, Babylonia and the far East, and in balance of parts and grace of line has few rivals. The right hand of the figure is extended as if to call attention to the inscription toward which the face is turned, while the left hand is raised, the index finger pointing upwards.¶

The Tower at Palenque is the most conspicuous and important building. It has been described by Mr. Holmes:

"It is a square building of four stories, three principal and one inferior, and has a stairway extending up through the center of the four floors. It was probably an observatory, the upper windows and roof commanding a view of all the surrounding buildings. It is seen in the panorama, and its height

¶See plate.

†See cut.

—suggestive of the feudal citadel—lends an air of the picturesque to the pile of ruins. The upper story is half gone. The doorways or windows are broken out above. The masonry has been denuded of coatings of plaster or color. The stairway and windows are manifestly the main features. The enclosed spaces or galleries are only wide enough to serve as passage ways from window to window or stair to stair. The stairway is twenty inches wide, and has a masonry walk. The second story repeats the first story very closely."

The western court measures about 30x80 feet, and has a narrow stairway leading up to the central building (C). In the southern court (D) stands the structure known as the "Tower," well preserved. Its base is about thirty feet square, and rests like the other buildings on the platform of the pyramid some eight or ten feet above the courts. The construction



SCULPTURED DOORWAYS OF THE TEMPLE AT PALENQUE.

of the interior buildings is precisely the same as the main corridors, though they have traces of rich ornamentation in stucco.

This ornamentation was drawn altogether from the religious practices of the people, but it is at the same time suggestive of the stage of art which prevailed among the people. It often, however, contained a sort of picture writing which becomes very suggestive as to the events which occurred. This will be seen in the cuts which represent captives looking up as supplicants to chiefs or kings. There are, however, other tablets which reveal the appearance of the kings, and especially their apparel and attitudes.



We are convinced that there was far more culture among this people than could be found among the wild tribes of the north, but there was at the same time a strong religious feeling which kept the people in abject servitude to the priests and kings.

This may be learned from the temple architecture which prevailed, and especially from the tablets found in the temples. In fact, it is the opinion of those who have compared the hieroglyphics at Palenque with those found on the stelae at Copan, and with those recently discovered on the piers and lintels and altars at Piedras Negras, that a homogeneous people formerly dwelt in this region, whose history dates back to 300 and 113 B. C., but whose migrations took place at some unknown period. That there was an Archaic nation is evident from the inscriptions that have been found on the ruined structures of Tobasco, Chiapas, Yucatan and Central America, for these seem to contain a similar calendar system and a similar ritual; and yet the freshness of the inscribed tablets and other facts would refute the theory of an extreme antiquity.

It appears that the priests were the learned class, but they used pictographs which could be easily understood, and yet employed hieroglyphics and symbols which hid their knowledge from the people.

One peculiarity about the temples of this entire region, including those at Lorillard, as well as those at Palenque, is to be noticed. They not only contained sculptured tablets in their interiors which represented the various religious ceremonies which were practiced, and the Native Divinities which were worshipped, but also exhibited the same things on their facades. The lintels and piers which surrounded their doorways were covered with these strange figures. Illustrations of these are given in the cuts, two of which are taken, from Stephens engravings of the doorways in front of the Temple of the Three Tablets at Palenque, and outlines from Charnay's photographic drawing of the Lintels of a Temple at Lorillard. Charnay's description of the latter is given in the following words:

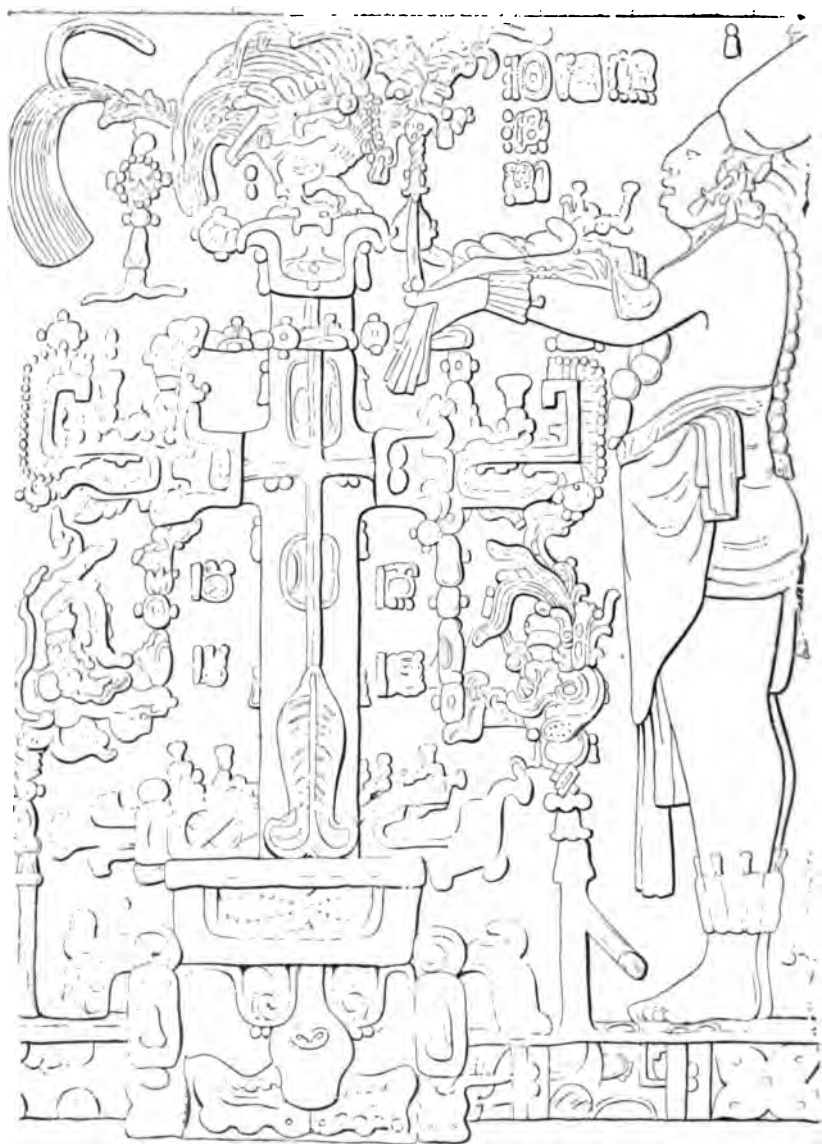
"The high reliefs are lintels from a small ruined edifice at the foot of a pyramid, are of great interest and marvellous richness of detail. The figure to the left holding a sceptre in his right hand with an aigret on his huge head-dress, similar to that in the palace at Palenque. He may be a King, or more probably a priest of Quelzalcoatl. Both figures wear the usual dress but the priests medallion is a gem of art."

The cut represents a religious ceremony in which a kneeling figure has a rope filled with thorns passed through the tongue — while the other, the priest, holds over him a huge palm, encouraging the person to go on with the penance. Sahagun says:

"They pierced a hole with a sharp knife through the middle of the

See 19th Annual Report of the Bureau of American Ethnology, 1897-98, page 803.





TABLET INSIDE THE TEMPLE OF THE CROSS.

tongue, and passed a number of twigs, fastened to a long cord through the tongue—which done by the penitent, his sins were forgiven."

Mr. Teobert Maler has spent considerable time in examining others, and has made a report of some of them to the Peabody Museum of Archæology.

At Piedras Negras he found the most interesting series of monuments and ruined buildings which constituted the different parts of a city which was perhaps, once as magnificent as Palenque itself, and what is more, a series of altars and slabs,



SCULPTURED LINTEL AT LORILLARD.

on which were sculptured some of the most interesting figures that have ever been found on the continent. Here was a platform with a stone stairway leading to the second terrace, which was adorned with eight large stelæ on which are sculptured many highly wrought figures. Above this platform were the ruins of two temples, and still further up was an acropolis, the only one that has been discovered in this entire region. The description of the stelæ is contained in the report, and illustrated by a series of heliotype plates. It is impossible to describe these in the short space left us, but they show the barbaric splendor with which the kings and princes of the ruling classes of this region adorned themselves. From them we may learn much concerning the textile fabrics, the feather work, the jewels, and jewelled breastplates, necklaces, capes, wristlets, bracelets, capes, sashes, maxtli, anklets, diadems and crowns which were worn by old and young. Nothing that has come down to us from the ancient Mycænic times of Greece, or from the Babylonian Empire exceeds in elaborateness of ornament and decoration the dress and regalia worn by these mysterious and unknown Princes. There was a barbaric splendor which has long since passed away, but was most surprising in its variety and abundance.

The figures of kings and queens, and even of the royal

family, are represented on the slabs and stelae, and even by the sculptured ornaments upon the piers and lintels of the palaces, which are truly astonishing. There are statuettes extant in England and in this country, two of which are in the possession of the writer, which represent Sardanapalus and his queen, the proudest monarchs of the Babylonian Empire, but if we are to judge from comparing these with the sculptured figures upon these slabs found in the midst of the deep forests of Central America, we should say that more expense and effort had been laid out by the unknown monarchs of this region in decorating their persons and the interior of their palaces with the habiliments of royalty than by these kings of the East. There is a profusion of jewels, and of precious stones, and of finely wrought needlework, and feather-work which was unknown in the palaces of the East, all arranged so as to astonish the eye by the brilliancy.

The comparison of these palaces in America with those which have been discovered in Cyprus, is suitable to engage our attention before we close this subject. The explorations by Mr. Arthur J. Evans have shown that a prehistoric civilization prevailed in Greece, Asia Minor, Egypt, Cyprus and Palestine, which resembled that which existed in America at the time of the discovery. The condition of art was perhaps at a higher stage, and the people were more advanced in many respects. Yet hieroglyphics and linear signs were quite similar. Architecture was scarcely more advanced. There were cyclopæan ruins and cities and strongholds, beehive tombs, vases, votive bronzes, engraved gems, demonstrating the fact that the great days of the Island story excelled the early historic period.

## FATHER TIME IN JAPAN OR JAPANESE CALENDARS.\*†

BY ERNEST W. CLEMENT, M. A.

The Japanese have plenty of time. This is true in more senses than one. In the first place they are never in a hurry, but take things very leisurely and calmly. It may be exaggeration to state that they reverse the Occidental advice, and never do to-day what can be put off till to-morrow: but at least they take plenty of time for doing things. They have two interesting proverbs relating to this subject: "If in a hurry, go around" (*Isogaba maware*)\*; and "Hurrying ruins the matter" (*Seite wa koto wo shisonzuru*), the latter of which is a good equivalent of our proverb, "Haste makes waste." With an old-fashioned Japanese, an appointment for 9 o'clock may be met at any convenient time before 10 o'clock, because it is troublesome to take note of minutes, and it is, therefore, considered to be 9 o'clock, in round numbers, until it is 10 o'clock. Or, if he misses one train, "*shikata ga nai*" (way there is not," or "there's no use"), and he waits patiently for the next train, even though it be half a day. It is thus evident that in old Japan there was no use for our proverb, "Time is money," and especially because money-making was despised, and the merchant was the lowest of the four classes of society (soldier, farmer, artisan, merchant). And if it is true that "procrastination is the thief of time," he must have filched cycles or centuries in old Japan. But Mr. E. H. House has suggested that the old practice of the Japanese indicated that they believed punctuality to be the thief of time.

This propensity to neglect the minutes in reckoning probably grew out of the fact that in Old Japan the common interval of time was equivalent to two hours. The day was divided as follows:

<i>Kokonotsu-doki</i> (ninth hour),	11 p.m.-1 a.m. and†
	11 a.m.-1 p.m.
<i>Yatsu-doki</i> (eighth hour),	1-3 a.m. and p.m.
<i>Nanatsu-doki</i> (seventh hour),	3-5 " " "
<i>Mutsu-doki</i> (sixth hour),	5-7 " " "
<i>Itsutsu-doki</i> (fifth hour),	7-9 " " "
<i>Yotsu-doki</i> (fourth hour),	9-11 " " "

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\*In the study of this subject, Bransen's "Chronological Tables" are, of course, invaluable; but they are, unfortunately, not easily accessible.

†The descriptive and explanatory parts of this paper formed a portion of a paper which was read before the Asiatic Society of Japan in explanation of the almanac for 1902, and is printed in Vol. XXX, Pt. 1, of the Transactions of that Society. Those portions are reproduced here by permission of the Council of that Society; but they have also undergone careful revision, and have received new material.

‡In reckoning the hours, a distinction was sometimes made between the morning and evening as follows: *ake-mutsu* (6 a. m.), and *kure-mutsu* (6 p. m.)

As half an hour of that kind was equal to one hour of our kind, it is not strange, perhaps, that it is now difficult for some to reckon minute-ly!

With reference to this old-fashioned way of marking the hours, we quote further words of explanation from Chamberlain's "Things Japanese" (page 470):

"Why, it will be asked, did they count the hours backwards? A case of Japanese topsy-turvydom, we suppose. But then why, as there were six hours, not count from six to one, instead of beginning at so arbitrary a number as nine? The reason is this:—three preliminary strokes were always struck, in order to warn people that the hour was about to be sounded. Hence, if the numbers one, two and three had been used to denote any of the actual hours, confusion might have arisen between them and the preliminary strokes,—a confusion analogous to that which, in our own still imperfect method of striking the hour, leaves us in doubt whether the single stroke we hear is half-past twelve, one o'clock, half-past one, or any other of the numerous half-hours."\*

We may add that this style of computation is based on multiples of "nine" ( $1 \times 9 = 9$ ,  $2 \times 9 = 18$ ,  $3 \times 9 = 27$ ,  $4 \times 9 = 36$ ,  $5 \times 9 = 45$ ,  $6 \times 9 = 54$ ), and in each case the "tail" figure of the product was chosen as the name of the hour (9, 8, 7, 6, 5, 4).

In the second place, the Japanese have plenty of time, because they have several different ways of reckoning the days, months, years and other periods. They have both solar and lunar time; Japanese, Chinese and Occidental time; two national calendars and several special periods; so that they have literally "a time for every thing," and, in some cases, they are very particular to do a certain thing "on time." Of the two Japanese calendars, one reckons from the mythological founding of the Japanese Empire by Jimmu Tenno, in 660 B. C., and is known as *kigen* (history-beginning); and the other is the special period called "*Meiji*" (Enlightened Rule), which began after the accession of the present Emperor, Mutsuhito. Thus, to illustrate, I happen to have before me an old issue of the *Kokumin Shimbun*, a daily newspaper of Tōkyō, and find the following dates:—*Meiji*, 35th year; *Kigen*, 2562; Occidental calendar, 1902; Chinese calendar, *Kōcho*, 27th year. 2nd month [February], 7th day, Friday. Old calendar, *Ka no-to-Ushu*, 12th month, 29th day, *Ka no-to-Tori*. Sun rises, 6:39 a. m. Sun sets, 5:12 p. m. Moon rises, 5:17 a. m. Moon sets, 4:04 p. m. High tide, 4:33 a. m. and 4:56 p. m."

And then, as if to emphasize the contrasts between the old and the new in this mixture, is added the notice of the following time-saving device; "Telephone, Shimbashi, Special No. 70 (Editorial); Shimbashi, No. 2,850 (Office)."

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\*The old dial had only one hand, which was stationary, while the face moved from right to left.

In the old style of reckoning, the years were named according to the twelve signs of the Chinese zodiac, taken in conjunction with the ten "celestial stems" (*jikkan*), obtained by dividing into two parts each of the five elements (wood, fire, earth, metal, water). These elements are known in Japanese as *ki*, *hi*, *tsuchi*, *ka* (for *kane*), and *mizu*; and the subdivisions are called *e* (or *ye*) and *to*, of which the former is said to represent the active element and the latter the passive element. Rein's explanation is as follows: "They [the Japanese] distinguish accordingly (with special Chinese signs) *ki-no-ye*, wood in general, and *ki-no-to*, worked wood; *hi-no-ye*, natural fire (of the sun, volcanoes), and *hi-no-to*, domestic fire; *tsuchi-no-ye*, raw earth, and *tsuchi-no-to*, manufactured earth; *ka-no-ye*, native metal, and *ka-no-to*, worked metal; *midzu-no-ye*, running water, and *midzu-no-to*, stagnant water."\* Thus the name of the old calendar year (*Ka-no-To—Ushi*), just mentioned, means "Wrought metal—Ox;" and the name of that day, *Ka-no-To—Tori*, means "Wrought metal—Cock."

Names of the constellations in the Sinico-Japanese Zodiac.	Names of our corresponding constellations.
Rat [ <i>ne (zumi)</i> ]	Aries
Ox [ <i>ushi</i> ]	Taurus.
Tiger ( <i>Tori</i> )	Gemini.
Hare ( <i>u (sagi)</i> )	Cancer.
Dragon ( <i>tatsu</i> )	Leo.
Serpent ( <i>mi</i> ) [ <i>hebi</i> ]	Virgo.
Horse ( <i>uma</i> )	Libra.
Goat [ <i>hitsuji</i> ]	Scorpio.
Monkey [ <i>saru</i> ]	Sagittarius.
Cock [ <i>tori</i> ]	Capricornus.
Dog [ <i>inu</i> ]	Aquarius.
Boar [ <i>i</i> ]	Pisces.

The following explanation is from Loureiro's "Anglo-Chinese Calendar":—

*Ki-no-e* = growing tree; *Ki-no-to* = hewn timber; *Hi-no-e* = lightning; *Hi-no-to* = burning incense; *Tsuchi-no-e* = hills; *Tsuchi-no-to* = earthenware; *Ka-no-e* = ore; *Ka-no-to* = kettles; *Mizu-no-e* = salt water; *Mizu-no-to* = spring water.

The lunar year was divided into twelve months of alternately 29 and 30 days each, and thus contained only 354 or 355 days; but this discrepancy from the solar year was made up by adding to certain years of every lunar circle an intercalary month of varying length. An intercalated year contained 383 or 384 days.† The months were named numerically, as follows:

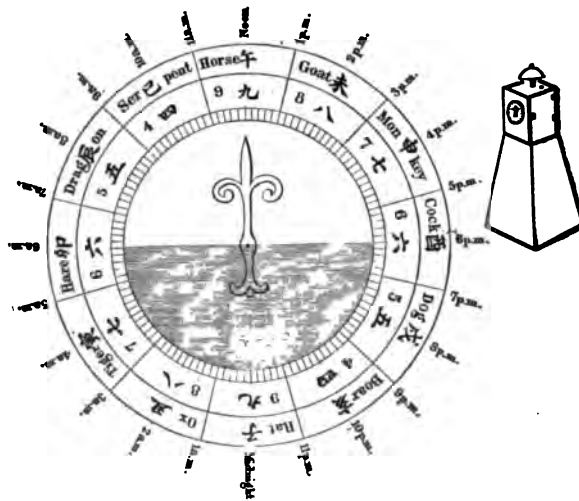
\*Brinkley's Dictionary gives the following explanations of *eto*:—"Tinoe tree; *kinoto*, herb; *hinoe*, fire; *hinoto*, charcoal fire; *tsuchinoe*, earth; *tsuchi-no-to*, earthen ware; *kanoe*, coin; *kanoto*, hardware; *mizunoe*, sea water; *mizunoto*, stream." Others distinguish "upper" and "lower;" or "male" and "female;" or "elder brother" and "younger brother;" or great and "small."

†The current year, 1903, is the 40th year of the present cycle, which began in 1864, and is a leap year.

Ichigatsu. First Moon, (Shogatsu—True Moon); Nigatsu. Second Moon; Sangatsu. Third Moon; Shigatsu. Fourth Moon; Gogatsu. Fifth Moon; Rokugatsu. Sixth Moon; Shichigatsu. Seventh Moon; Hachigatsu. Eighth Moon; Kugatsu. Ninth Moon; Jugatsu. Tenth Moon; Juichigatsu. Eleventh Moon; Junigatsu. Twelfth Moon.

All of the months had also poetical applications, as follows:

1. Mutsuki (Social month). Or Umutsuki (Birth month).  
Or Taro-zuki (Eldest-son month).
2. Kisaragi (Putting on new clothes).
3. Yayoi (Great growth).
4. Uzuki (Hare month). Or Mugi-aki (Wheat harvest).
5. Satsuki (Early moon).



OLD CLOCK

THE JAPANESE CALENDAR.

6. Minazuki (Water-less month). Period of drought.
7. Fumizuki (Rice-blooming month). Or (Composition month).
8. Hatsuki (Leafy month). Or Tsukimizuki (Moon-viewing month).
9. Nagasuki (Long moon). Or Kikuzuki (Chrysanthemum month).
10. Kannazuki (God-less month). Or Koharu (Little Spring).
11. Shimotsuki (Frost month). Or Yogetsu (Sunny month).
12. Shiwasu (Finishing up month). Or Gokugetsu (Last moon)

The four seasons of spring, summer, autumn, and winter were recognized; and there were also 24 periods of 14 or 15 days each, which, to a great extent, indicated the weather, and which the farmer carefully followed in planning his labors. These were as follows, beginning in February, about the time of the beginning of the New Year (o.c.):

1. Risshun (Rise of Spring).	} February.
2. Usui (Rain Water).	
3. Keichitsu (Awakening of Insects).	} March.
4. Shumbun (Vernal Equinox).	
5. Seimei (Clear and Bright).	} April.
6. Koku-u (Cereal Rain).	
7. Rikka (Rise of Summer).	} May.
8. Shoman (Little Filling).	
9. Boshu (Grain in Ear).	} June.
10. Geshi (Summer Solstice).	
11. Shosho (Little heat).	} July.
12. Taisho (Great Heat).	
13. Risshu (Rise of Autumn).	} August.
14. Shosho (Limit of Heat).	
15. Hakuro (White Dew).	} September.
16. Shubun (Autumnal Equinox).	
17. Kanro (Cold Dew).	} October.
18. Soko (Frost Fall).	
19. Ritto (Rise of Winter).	} November.
20. Shosetsu (Little Snow).	
21. Taisetsu (Great Snow).	} December.
22. Tōji (Winter Solstice).	
23. Shōkan (Little Cold).	} January.
24. Daikan (Great Cold).	

The peasantry also observed rather scrupulously other special times, which Chamberlain thus explains: "For instance, they sow their rice on the eighty eighth day (*Hachi-ju-hachi ya*) from the beginning of spring (*Risshun*), and they plant it out in *Ryubai*, the period fixed for the early summer rains. The two hundred and tenth and two hundred and twentieth days (*Ni-hyaku-toka* and *Ni-hyaku hatsuka*) from the beginning of spring, and what is called *Hassaku*, that, is the first day of the eighth moon, Old Calendar, are looked on as days of special importance to the crops, which are certain to be injured if there is a storm, because the rice is then in flower. They fall early in September, just in the middle of the typhoon season. St. Swithin's Day has its Japanese counterpart in the *Ki-no-E Ne*, [Natural wood, vat day], mentioned above as the first day of the sexagesimal cycle, which comes around once in every two months approximately. If it rains then, it will



rain for the whole cycle, that is, for sixty days on end. Again, if it rains on the first day of a certain period called *Hassen*, of which there are six in every year, it will rain for the next eight days. These periods, being movable, may come at any season. Quite a number of festivals, pilgrimages to temples, and other functions depend on the signs of the zodiac. Thus, the *mayu-dama*, a sort of Christmas tree decorated with cakes in honor of the silk-worm, makes its appearance on whatever date in January may happen to be the First Day of the Hare (*Hatsu-U*). There were also seventy-two "seasons," (*Shichijunz-bo*) but what they were I have not learned.

In old Japan the week was entirely unknown; and it was not till the present era [Meiji], that the *ichi-roku*† or holidays on the "ones" and "sixes" of each month, were introduced. But that was speedily abandoned for the week system, with Sunday as an official holiday, and with names adapted from the Occidental names, as follows:

<i>Nichiyobi</i> .....	Sun-day=Sunday.
<i>Getsuyobi</i> .....	Moon-day=Monday.
<i>Kwayobi</i> .....	Mars-day=Tuesday.
<i>Suiyobi</i> .....	Mercury-day=Wednesday.
<i>Mokuyobi</i> .....	Jupiter-day=Thursday.
<i>Kinyobi</i> .....	Venus-day=Friday.
<i>Doyobi</i> .....	Saturn-day=Saturday.

And Prof. Chamberlain tells of the adoption of even the Saturday half holiday:—"Sunday being in vulgar parlance *Dontaku* [a corruption of the Dutch *Zondag*], Sunday is called (in equally vulgar parlance) *Handon*, that is "half Sunday."

There is, moreover, another division of the month more or less common even at the present day. By it, each month is divided into three periods, called *jun*, of about ten days, known as *jōjun*, *chūjun*, *gejun* (upper, middle and lower decade).

The days of each month were named, not only in numerical order, but also according to the sexagesimal table described above in connection with the names of the years in "a cycle of Cathay." And the latter names were perhaps more important than the numerical ones, because, according to these special names, a day was judged to be either lucky or unlucky for particular events. "Every day has its degree of luck for removal [from one place to another], and, indeed, according to another system, for actions of any kind; for a day is presided over in succession by one of six stars which may make it lucky throughout or only at night, or in the forenoon or the afternoon, or exactly at noon, or absolutely unlucky. There are also special days on which marriages should take place, prayers are granted by the gods, stores should be opened, and sign-boards put up." Dr. Giff's informs us in the "The Mikado's Empire," that "many people of the lower classes would not

wash their heads or hair on 'the day of the horse,' lest their hair become red." On the other hand, this "horse day" is sacred to Inari Sama, the rice-god, who employs foxes as his messengers; and "the day of the rat" is sacred to Daikoku, the god of wealth, who, in pictures, is always accompanied by that rodent. Carpenters also have their lucky and unlucky days, as we learned at the time when the recitation-building of the Duncan Baptist Academy, Tokyo, was going up. The roof raising had been originally planned for March 14-16, [1901], but was unavoidably delayed. As it was expected to cover three days, which should be consecutive, and not broken into by the 17th, Sunday, the next possible dates were March 18-20. But as March 18 (Monday) was "tiger day," and considered inauspicious, the time was fixed for March 19-21, the days, respectively, of the "hare," the "dragon" and the "serpent." The original dates would have been auspicious, because they were the "dog," the "boar" and the "rat." As for wedding days, Rev. N. Tamura says: "We think it is very unfortunate to be married on the 16th of January, 20th of February, 4th of March, 18th of April, 6th of May, 7th of June, 10th of July, 11th of August, 9th of September, 3rd of October, 25th of November, or 30th of December, also on the grandfather's or grandmother's death day." These dates are probably applicable to only the old calendar. "Seeds will not germinate if planted on certain days" (Griffis).

The hours were named, not only according to the plan mentioned above, but also according to the heavenly menagerie in the following way:

1.	Hour of the Rat,.....	11 p.m.—1 a.m.
2.	" " Ox,.....	1-3 a.m.
3.	" " Tiger,.....	3-5 a.m.
4.	" " Hare,.....	5-7 a.m.
5.	" " Dragon,.....	7-9 a.m.
6.	" " Serpent,.....	9-11 a.m.
7.	" " Horse,.....	11 a.m.—1 p.m.
8.	" " Goat,.....	1-3 p.m.
9.	" " Monkey,.....	3-5 p.m.
10.	" " Cock,.....	5-7 p.m.
11.	" " Dog,.....	7-9 p.m.
12.	" " Boar,.....	9-11 p.m.

It will be noticed that each period is two hours (Occidental) long; but it was also divided, as were likewise the numerical "hours" mentioned above, into *jōkoku* and *gekoku* (upper and lower *koku*), each of which was thus equivalent to exactly one hour of sixty minutes. The "hour of the ox," by-the-way, being the time of sound sleep, was sacred to women crossed in love for taking vengeance upon a straw image of the recreant

lover at the shrine of Fudo." After 5 p.m. many people will not put on new clothes or sandals" (Griffis).

## OUTLINE CALENDAR OF MEIJI 36th YEAR.

### OCCIDENTAL CALENDAR 1903rd YEAR.

Jimmu Tenno Festival, April 3.  
Autumn Festival, September 24.  
Kanname Festival, October 17.  
Emperor's Birthday, November 3.  
Niiname Festival, November 23.

### CHINESE CALENDAR, KCCHO 29th YEAR.

Four Sides Worship, January 1.  
First Beginning Festival, January 3.  
Emperor Komei's Festival, January 30.  
Kigen-stetsu, February 11.  
Spring Festival, March 22.  
2,653rd year from ascension of Emperor Jimmu—Common year, 365 days. National holidays.

### LARGE MONTHS.

First day—Ox. January—Natural water, tiger year. Large 12 mo. 3 d.  
First day—Rat. March—2 mo. 3 d.  
First day—Ox. May—4 mo. 5 d.  
First day—Tiger. July. 5 mo. 7 d.  
First day—Cock. August—6 mo. 9 d.  
First day—Dog. October—8 mo. 11 d.  
First day—Boar. December—10 mo. 13 d.

### SMALL MONTHS.

First day—Monkey. February—Artificial water, Hare year.  
First day—Goat. April—3 mo. 4 d.  
First day—Monkey. June—5 mo. 6 d.  
First day—Dragon. September—9 mo. 22 d.  
First Day—Serpent. November—7 mo. 10 d.  
Artificial water, Hare year—old calendar

First day 1st month small, Jan. 22.	Higan—March 19, September 21.
First day 2nd month, large, Feb. 27.	Natural Wood-Rat Days—February
First day 3rd month, small, Mar. 9.	5, April 6, June 5, August 4, October
First day 4th month, large, April 27.	3, December 2.
First day 5th month, small, May 27.	Natural Metal, Monkey Days—
First day interc. 5th month, small, June 25.	February 1, April 2, June 1, July 31,
First day 6th month, large, July 24.	September 21, November 28,
First day 7th month, small, Aug. 23.	Shanichi—March 21, September 27.
First day 8th month large, Sept. 21.	Setsburn—February 4.
First day 9th month, small, Oct. 21.	First Honey Day—February 11.
First day 10th month, large, Nov. 19.	Seven Luminaries—Sun, Moon, Mer-
First day 11th month, small, Dec. 19.	cury, Jupiter, Venus, Saturn.

## TWENTY-FOUR PERIODS.

<b>Shokan</b> .....	Jan 6, 8, 29 p. m.	<b>Shosho</b> .....	July 8, 5: 37 p. m.
<b>Daikan</b> .....	Jan. 21, 2, 13 p. m.	<b>Tasho</b> .....	July 24, 10: 59 a. m.
<b>Risshuu</b> .....	Feb. 5, 8: 31 p. m.	<b>Risshu</b> .....	Aug. 9, 3: 16 a. m.
<b>Usui</b> .....	Feb. 20, 4: 41 a. m.	<b>Shosho</b> .....	Aug. 24, 5: 42 p. m.
<b>Keichitsu</b> .....	Mar. 7, 2: 59 a. m.	<b>Hakuro</b> .....	Sept. 9, 5: 42 a. m.
<b>Shumbun</b> .....	Mar. 22, 4: 15 a. m.	<b>Shubur</b> .....	Sept. 24, 2: 44 p. m.
<b>Seimei</b> .....	April 6, 8: 26 a. m.	<b>Kanro</b> .....	Oct. 9, 8: 42 a. m.
<b>Kokushu</b> .....	April 21, 3: 59 p. m.	<b>Soko</b> .....	Oct. 24, 12: 23 p. m.
<b>Rikka</b> .....	May 7, 2: 25 a. m.	<b>Ritto</b> .....	Nov. 8, 11: 13 p. m.
<b>Shoman</b> .....	May 22, 3: 4 p. m.	<b>Shosetsu</b> .....	Nov. 23, 8: 22 p. m.
<b>Boshu</b> .....	June 6, 7: 07 a. m.	<b>Toji</b> .....	Dec. 23, 9: 21 a. m.
<b>Geshi</b> .....	June 23, 5: 05 a. m.	<b>Taisetsu</b> .....	Dec. 8, 3: 35 p. m.

## SUNDAYS.

Jan.	}	4, 11, 18, 25.
Oct.		
Feb.	}	1, 8, 15, 22.
March		
Nov.	}	1, 8, 15, 22, 29
April		
July	}	5, 12, 19, 26.
May		
June	}	3, 10, 17, 24, 31.
Aug.		
Sept.	}	7, 14, 21, 28.
Dec.		
	}	2, 9, 16, 23, 20.
	}	6, 13, 20, 27.

## DOYO.

January 18, 3: 29, p. m.
April 18, 2: 14 p. m.
July 21, 7: 36 a. m.
October 21, 11: 06 p. m.
Eighty-eighth Night—May 6.
Rainy Season—June 12.
Half-Summer beginning July 3.
Two hundred and tenth day Sept. 2.

There is also a division of the night into watches (*ko*), five in number, as follows:

*Shokō* First Watch—Fifth Hour, 7-9 p.m.

*Nikō* Second Watch—Fourth Hour, 9-11 p.m.

*Saukō* Third Watch—Ninth Hour, 11 p.m.—1 a.m.

*Shikō* Fourth Watch—Eighth Hour, 1-3 a.m.

*Gokō* Fifth watch—Seventh Hour, 3-5 a.m.

Some of the national holidays and other festivals need a few words of explanation. *Kigen-sestu*, for instance, was originally a festival in honor of the ascension of Jimmu, the first Emperor, to the throne, and was thus the anniversary of the establishment of the Old Empire. but it is now observed also as the celebration of the promulgation of the constitution (Feb. 11, 1889), and is thus the anniversary of the establishment of the New Empire. The Jimmu Tennō Festival of April 3, is the so-called anniversary of the death of that Emperor. The *Kanname* Festival in October celebrates the offering of first-fruits to the ancestral deities, and the *Niname* Festival in November celebrates the fasting of those first-fruits by the Emperor. The Spring and Autumn Festivals in March and September, are adaptations of the Buddhist equinoctial festivals of the dead, *Higan*, and are especially observed for the worship of the Imperial ancestors. The Emperor Komei was the father of the present Emperor, and reigned from 1847 to 1867. "Four Sides Worship," naturally suggests worship from the four principal directions. *Shaniche* are days, "supposed to be lucky to do farm work. Dogō indicates a radical change in the weather.

*Setsubun* has been called "New Year's Eve" as well as the last night of winter. It will be noticed that, in this case, the last night of the old year [o. c.] is seven nights before; but once in two or three years both winter and the old year go out at the same time. *Setsubun* is the time when in every house beans are scattered around to scare away the devils, and the following formula is also supposed to be effective:

<i>Oni wa soto</i>	<i>Fuku wa uchi:</i>
"Out with the devils.	In wi h good fortune."

This is also the occasion when "each person present eats one more [bean] than the number of the years of his age. The food eaten then is known as *azukimeshi*, and it consists of red beans mixed with rice. This was likewise eaten in olden times on the 1st, 15th and 28th of each month, which were the "three days" (*sanjitsu*) then regularly observed as holidays. For a fuller description of *Setsubun* see Hearn's "Glimpses of Unfamiliar Japan," Vol. II., pp. 498-503; and for interesting notes on the New Year's Festival see pp. 493-498 of the same volume.

In Lafcadio Hearn's "Shadowings" under the subject of "Japanese Female Names," we find the same items bearing on different phrases of our subject. For instance, in the course of his researches, he came across *Ushi* "Low" or "Ox," as a girl's name, and adds the following comment: "This extraordinary name is probably to be explained as a reference to date of birth. \* \* \* I surmise that Miss Ushi was born at the Hour of the Ox, on the Day of the Ox, in the Month of the Ox, and the Year of the Ox."

He also gives a list of names "relating to time and season," as follows:

O--Haru.....	Spring.
O--Natsu .....	Summer.
O--Aki.....	Autumn.
O--Fuyu .....	Winter.
O--Asu.....	Morning.
O--Chō .....	Dawn.
O--Yoi .....	Evening.
O--Sugo .....	Night.
O--Im .a.....	Now.
O--Toki .....	Time.
O--Toshi.....	Year [of Plenty].

And under "names signifying brightness," appear

O--Tenki .....	Moon.
O--Mika .....	New Moon.

The latter is literally an abbreviation of *Mikazuki*, itself an abbreviation of *mikka-zuki*, "the moon of the third night" [of the honor month].

In "Japanese Miscellany"; Hearn quotes the Japanese poet who says "Spring is the Season of the Eyes; Autumn is the Season of the Ears." In spring, of course, the chief delight is in looking upon the blossoming flowers, but in fall it is in the "music of countless insects."

In the same book, under "Songs of Japanese Children, we find one which we quote entire:

## KEY TO BATTENDOOR SONG.

Shogwatsu—Kadomatsu.	Schichigwatsu—Tonabata;
Nigwatsu—Hatsu-uma;	Hachigwatsu—Hassaku;
Sangwatsu—Sekka;	Kingwatsu—Kkiu-tsuki;
Shigwatsu—P Shaka;	Jingwatsu—Ebisu-ko;
Gogwatsu—Nobori;	Shimotsuki; Shiwason;
Rokugwatsu—Sekka.	Kokono yode Itcho yo!

First month—Gate Pinetree; second month, First Day of the Home; New Year's decorations; sacred to Quari Sama [Rice-god]; third month, girls's festival; fourth month, August Buddha; fifth month Flags—boy's festival; sixth month, Tutelord god's festival; seventh month, festival of the weavers; eighth month, first day festival; ninth month, chrysanthemum month; tenth month festival of Ebisu. First month; last month; nine strokes given. Now *une cho* is completed.

As most of the references have been already explained, it is not necessary to reproduce all the notes; the following will suffice:

Buddha's birthday is celebrated on the 8th day of the month; the Weaver is the Star Vega; Ebisu is the "Patron-God of Labor. The meaning of the last two lines is not clear.

The following from Chamberlain's "Things Japanese," gives an excellent idea of the status of the moon among Japanese: "Far more important than the sun to ethnic persons is the moon. Of all subjects, this is the one on which Japanese poets and romance writers most constantly dwell, one of them emphatically asserting that "all griefs can be assuaged by gazing at the moon." People still worship the crescent each time it is point over; but the greatest nights of the year are the 26th of the 7th moon, the 15th of the 8th moon and the 13th of the ninth moon, old calendar, which roughly correspond to dates some five or six weeks later according to our calendar, and this includes the three moons of the autumn time. On the 26th night of the moon people in Tokyo visit the tea houses at Atago-yama or those on the seashore of Takananawa and sit up till a very late, or rather early hour, to see the moon rise over the water, drinking *sake* the while, and composing verses appropriate to the sentimental character of the scene. The 15th night of the 8th moon, which is no other than our harvest-moon at the full, is celebrated by an offering of beans and dumplings and of bouquets of eulalia grass and lespediza blossom. This moon is termed the "bean

moon." The 13th night of the 9th moon sees offerings of the same bouquets, of dumplings and of chestnuts. It is termed the "chestnut moon."

The following clipping from the *Japan Mail*, Yokohama, refers to one of the nights mentioned above:

"One of the old customs still generally observed by the Japanese is the "Niju-roku-ya" [twenty-sixth night]. By the expression "Niju-roku-ya" is meant that at a certain hour on the night of the 26th of the 7th moon old style; lunar calendar; the moon rises in three separate forms on the eastern horizon and those who see this phenomenon are blessed beyond compare. Last Saturday, Aug. 30th, 1902, being the "Niju-roku-ya" the elevated spots about the town such as Takashima-yama, Iseyama, etc., were crowded by many citizens, while the pier, the Bund, and the shores of Honmoka were likewise densely packed. In the harbor, a bright-spectacle was presented by the appearance of many lighters and boats tastefully decorated with lanterns, which were provided for the amusement of fashionable people. The moon rose shortly before 2 a. m. in its ordinary guise, but the sightseers appeared well satisfied."

It should be borne in mind that the Japanese year periods (*nengo*) do not, unless accidentally, regularly correspond with the reigns of the Emperors, because "a new one was chosen whenever it was deemed necessary to commemorate an auspicious or ward off a malign event." But hereafter the era will correspond with the reign of an Emperor. The names of some of these eras are quite famous, like the Elizabethan or the Victorian Era in English history. As the first era was a time of great reforms, it is known as the Taikwa Reformation; the Engi Era, in the tenth century, is celebrated for important legislation; the Genroku Era, in the seventeenth century, was "a period of great activity in various arts;" and the Tempo Era, of recent days, was "the last brilliant period of feudalism before its fall." This name was also given to the large 8 *rin* piece coined in that era. The Wado Era, in the fourteenth century, was so named on account of the discovery of copper; and the second era, Hakuchi, commemorates a "white pheasant," presented to the Emperor.

There are, moreover, other expressions which more closely resemble such common Occidental phrases as the Victorian Era, the Elizabethan Era, the Age of Pericles, except that in the impersonal Orient such expressions are named more often from places. In Japanese history, for instance, it is very common to read of the Nara Epoch, the Heian Epoch, the Muromachi Period, the Kamakura Period, the Yedo Era, the Tokyo Period; Modern Japan. Personal names are applied, however, in such cases as the Hojo Era, the Ashikaga Period, the Tokugawa Era, the Fujiwara Period.

## THE NEWLY DISCOVERED PRE-MASSORETIC HEBREW PAPYRUS.

BY JOSEPH OFFORD, M. J. S.

The closing meeting of the "Society of Biblical Archaeology" for the year 1902 will be memorable because of the presentation thereof of the remarkable papyrus containing a Hebrew pre-Massoretic version of the Decalogue and some verses of Deuteronomy, which is the property of an enthusiastic member of the society, Mr. Nash.

The papyrus was fully described by Mr. Stanley A. Cook, author of the well known "Aramaic Glossary" and a scholar particularly suitable for the task because of his intimate knowledge of the various scripts allied to Hebrew to be found in monumental inscriptions of the early centuries of our era; and also of all Hebrew writing upon seals and gems. The meeting was also favored by the presence and remarks of Mr. Burkitt, editor of the Geniza fragments of Aguilu's Old Testament.

Although the writing upon the papyrus is so short—only about 24 lines—and almost all of these a little mutilated at the ends, the variants between its contents and the accepted Jewish Massoretic text are so numerous and of such value that the manuscript will be one of extreme importance.

The fact of its being written upon papyrus is in itself suggestive of its being anterior to the fourth century, and Mr. S. A. Cook, from Paleographical reasons, considers it quite justifiable to assign it to somewhere in the second, or perhaps as late as the third century of our era. The most weighty arguments for this view were the similarity between the formations of the letters and those of first and second century Palmyrene and Nabatean inscriptions. Also the great difference between the letters of the papyrus and those of all hitherto known Hebrew manuscripts whose date commenced in the eighth or ninth century onward. It also has no vowel points or diacritical marks of any kind, in fact none of the usual paleographical adjuncts to Hebrew texts of all known manuscripts.

With regard to the text it exhibits, the first thing the Lecturer endeavored to decide was, is it a writing embodying the Exodus copy of the Decalogue, or that to be found in Deuteronomy? The variants in regard to both these tend to show it must be classed, if it is necessary to assign it to a separate position, midway between Exodus and Deuteronomy; but if this is done it would be creating a recension of a third version, which is not unlikely.



After careful comparison and discussion of its peculiarities, Mr. Cook decided it is in reality a recension of Deuteronomy. Now in it the sixth and seventh Commandments are transposed but so they are in Mark and Luke and in some manuscripts, and there is reason to think they were in the ancient texts of the Hebrew Deuteronomy, which were considered as correct by the Jews until the Massoretes decided to crown as canonical a family of manuscripts which placed the Commandments in a different order. The text of the papyrus in the variants, omissions and additions it presents, is more like what must have been the Hebrew basic text utilized for translation into greek for the Septuagint, and also is akin to the text, whatever it was upon which the old Latin version of the Old Testament is founded. It is also singularly similar to the text which Mr. Charles has shown was considered correct by the author of the pre-Christian work, the "Book of Jubilees" who it is now known though a Hebrew of the Hebrews, took as his authority a recension allied not to the Massoretic text but to the Marginal notes of that version and to the Septuagint and Samaritan.

As the papyrus agrees with the LXX against the Massoretic, it follows as a matter of course it is much closer to the Samaritan version than to the Massoretic. But there is no reason whatever to consider it as a Samaritan text.

Its variants do not however absolutely coincide with the LXX but are midway between the differences shown by the LXX in alliance with the Peshito Syriac in the instances where these two depart from the late Massoretic.

There can be but little doubt it is a recension of the Decalogue and the verses of Deuteronomy regarding the laws ordained by Moses and the fact of these being promulgated during the journey of the Exodus; which were commonly associated together by Jews as being the most precious part of the Pentateuch, representing a different family of manuscripts than that selected by the Massoretic for their standard text.

If this tends to show, as proved previously, by Dr. Ginsburg, in his magnificent edition of the Massorah together with all the Massoretic Marginal notes, that at the date of the preparation by the Robbins of the Massorah edition, there were, and they were aware of the fact, \*other families of texts, and moreover that one or more of these lines of text agreed with the Septuagint and Samaritan Pentateuchs, it is an important fact.

It is well known that the Samaritan and Septuagint versions tend to show an old Hebrew pentateuchel text much more favorable to the Christian view than the new testament books illustrate in their record an accurate fulfillment of the

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\*The Marginal notes of the Massoretic manuscripts are considered to indicate this.

Old Testament prophecies, by the career of Christ, than would be the case if we only had the Massoretic version for our guide. Consequently the new papyrus in most convincingly indicating that these versions are quite as likely to be authentic as the the Massoretic, tends most strongly to confirm the Christian position.

Jewish scholars may therefore be anticipated to argue that the new papyrus is of late date and uncanonical or of small interest, indeed during the discussion Dr. Gaster took up that position, which was ably controverted by Sir Henry Howarth.

That the papyrus was written by a Jewish inhabitant of Egypt is almost certain because of the curious fact that he omits the word alluding to that Country as "the house of bondage." Much as a Jew abhors the deletion of any fragment of his sacred scriptures he felt it was necessary to omit those words as being offensive to any Egyptian reader of the text. Further discussion of the papyrus until Mr. S. A. Cook's lecture is printed, would not be profitable, but it is well to inform scholars that here we have a Hebrew text of probably at least six centuries higher antiquity than any hitherto known, and one more discovery, which as with so many others, tends not to assail but to support the views of Christian scholars or to the validity of the claims of the Bible as a whole.

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## THE LEGEND OF ADAM'S BRIDGE.

BY ALBERTA FIELD, ASHTABULA, OHIO.

"Who has not heard of the Vale of Cashmere,  
With its roses the brightest that earth ever gave,  
Its temple and grottoes and fountains as clear  
As the love-lighted eyes that hang over their wave."

—*Lalla Rookh.*

It is strange how legendary tales cling to a people from generation to generation, and at the same time one notes the similarity of the different methodical origins of the human kind. Many an hour is whiled away on shipboard listening to the weird folk-lore tales of the strange shores one is passing. A great number of these legends, have, at this late day, no representative authority for their origin; but occasionally one hears one that has some semblance of substance for its foundation, as, for instance, the legend of Adam's Bridge, which at present obstructs the gulf of Manaaf between the island of Ceylon and the mainland.

As the story goes, once upon a time, Adam, who was then a celestial being, growing weary of his heavenly abode, became restless and looked about for new worlds in which to seek a greater contentment and peace of mind than he then

possessed, the life of celestial celibacy not fulfilling all the requirements of his lonely, earth-yearning heart, so one fine day he unfurled his travelling wings and flew far afield. Coming earthward he first set foot among the tall mountains of the island of Ceylon, alighting upon the most prominent height, which, by the way, is still known as Adam's peak, and made his way afoot and alone across the country to the shores of the island, where he found a natural bridge, erected by the powers of earth for his special benefit, and by which he was able to cross to the mainland of India. The remains of this bridge are still standing and have ever since this far away time, obstructed the passage between Ceylon and India, and its abutments can still be plainly seen above the water line, rendering the channel unsafe for navigation. Of course one immediately enquires as to the necessity of a bridge to a being equipped with such essentials for aerial locomotion as a pair of wings, but only learns, as the story goes, that the moment Adam set foot upon this mundane earth, his celestial pinions were lifted from his shoulders and snatched back to the realms of the gods, and he was left featherless to seek his fortune and cover ground by simply putting one foot before the other, as has been the fate of many a poor mortal since the time of this progenitor of our race.

However, to conclude the tale, Adam, we are told, crossed to the mainland from the then uninhabited island, where underneath the luxuriant plane trees of that "famed Indian land" he found Eve, the beautiful mother of mankind, and with whom he immediately fell in love, like the susceptible youth that he was, and hastened away with her beyond the barren mountain ranges that separates the rest of India from that delectable country so celebrated in verse for its accommodations for the sentimental and romantic members of society, the famous Vale of Cashmere, and where in prehistoric bliss he lived out the honeymoon "with that One by his side" where:

"If woman can make the worst wilderness dear  
Think, think what a Heaven she must make of Cashmere."

This East Indian legend, like the old fashioned novel, leaves its hero and heroine upon the threshold of wedded bliss and allows each individual descendant of this historical couple to continue the tale according to his own rights or the traditions of his kind, and to draw his own conclusions as to whether or no. Adam may not have much reason to regret his disposition of unrest that led him to wander away from the fair Elysian fields to this land of the great unwinged. But in any case, one is glad to learn just why, that forever and forever the ships will be obliged to pass around this Ceylon of cinnamon celebrity instead of following the course of the gulf of Manaar, which seems really the natural channel for navigators to employ.



THE VALE OF CASHMERE.

## VILLAGES IN CASHMERE AND MALABAR.

It would be impossible to pass by the Valley of Cashmere. Here the villages are formed of little groups of chalets, wherever the site is sheltered and there is water and sufficient space for the houses. The cultivation is on the terraced fields, forming separate holdings grouped together. In the valley, where there is more space, larger villages were found; in these villages there was no trace of any community of holding an area of land, but artisans and village menials are numerous. Each house has some space around it. Instead of the invariable dreary look of the Indian hamlet, we have in Cashmere the picturesque homesteads dotted about here and there. All have their little gardens and courtyards. In the courtyard is the wooden granary, like a sentry box, and here the women sit and husk the maize from the cobs. Most villages have a delightful brook on which is a quaint little bathing house, where the villagers leisurely performed their ablutions.

One of the prettiest objects in the village is the graveyard shaded by trees and bright with Iris purple and yellow.

In Malabar the general facts are similar. Here, among the upper class of landholders, the single house is often a handsome structure, standing in the midst of a square enclosed orchard; approached by a castellated gateway, and solidly built. It contains several families connected, making a joint family. The size of the village may be determined by the number of fields which the available water supply would reach.—EDITOR'S NOTE BOOK.



## PREHISTORIC FINLAND.

BY ALEXANDER F. CHAMBERLAIN.

In a communication to the "Société d'Anthropologie de Bruxelles" (Bulletin, Vol. XVIII, 1899-1900, pp. cix-cxviii), M. V. Jacques gives a résumé (based upon the Hackman-Heikel archæological map and the accompanying explanatory text), of the prehistory of Finland. For Finland the historical period begins only with the latter part of the fourteenth century, A. D. Its prehistory may be divided into the following periods or epochs:

I. Neolithic.—(Age of polished stone.) The stone implements left by the earliest inhabitants of Finland are of the same general character as those of the so called "neolithic period" of Europe. M. Jacques thinks that they belong "rather to the end of the neolithic, and some of them even to the bronze age." There are recognizable in Finland two archæological provinces, a southwest and an eastern, divided by the river Kymmene, the Tavastland lakes and the river Esse. The former region contains evidence of Scandinavian, the latter of Uralian influence. The finds of implements of this period are very unequally distributed, and the bronze age made its appearance earlier in southwest Finland.

II. Bronze. The period of transition between the age of stone and the age of bronze would appear to have been rather long, and implements of stone continued to be used together with those of bronze imported from Scandinavia for a considerable time after the appearance of the latter. Although the use of bronze was known in Scandinavia, according to Montelius, as early as 2000 B. C., it is not until 900-1000 A. D. that this metal is common on the shores of Lake Ladoga. The most of the foreign bronze objects found in Finland come from cairns [with evidences of incineration] "identical with the tumuli of Norsland and central Sweden." A few objects of this period indicate Oriental influence,—form and ornamentation suggest the Uralian bronze age. As a whole, the bronze age is not so important for Finland as for Scandinavia.

III. Iron,—first period. The oldest object of the iron age discovered up to 1899 in Finland dates back to the second century, A. D., and it is only with the fifth century that the use of iron becomes general in the southwestern part of the country, while in the east its employment was even more restricted. The first "iron age" in Finland may be said to extend to the year 400 A. D. The influence of the Roman empire made itself felt but little in Finland—only three Roman coins and a bronze ladle were all that had been discovered up to the date of the map. Scandinavian influence during this epoch is mark-

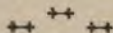


ed by many objects found in the southwest, all of which came from cairns like those of the bronze age. The pottery of this period is rude, made of poor clay and badly worked.

IV. Iron,—second period. During this epoch [V-XII centuries A. D.], the "iron age" acquires its full development. For the fifth century the finds are still not numerous. Extensive necropoli belonging toward the end of this period contain objects in quantity which indicate continued relations of the inhabitants of Finland with Scandinavia and the Baltic Provinces. On the other hand, ornaments and implements occur, which testify to connection with the Slavonic and Finnish tribes of Russia, and through them with the Arabic countries of Asia. Bronze objects found also exemplify Scandinavian influence and that of the Baltic Provinces. Toward the end of the period fragments of woollen tissues [from women's garments] occur. While gold abounds on the other side of the Gulf of Bothnia, only three gold coins [Valentinian III, Zeno and Phocas], a few gold rings and a partially gilt necklace of silver had been found in Finland up to the date of the map. The pottery is less rude than before. During all this period of from six to seven centuries incineration continued to be practiced in Finland; but, beginning with the eighth century, inhumation appears in the southwest, although Christianity had not yet entered the country. This mode of burial extends gradually, until, during the last prehistoric period, the custom becomes almost general.

V. Iron—third period. The greater part of the necropoli of this period are situated on the two branches of the river by which Lake Vuoksen empties into Lake Ladoga, and a little farther north. There is also a necropolis of this period south of St. Michel, and another in the government of Abo, besides accidental deposits in various parts of the country. The influence of Scandinavian art is still seen in the ornaments, but objects suggesting affinity with the ornaments and implements of the same epoch among the Finnish peoples of Russia are more numerous. The bracelet seems to have disappeared. The fibulæ used by the men were smaller than those of the women. Here and there crosses, reliquaries of Christian origin, a baptismal basin, etc., have been found. The women's fibulæ are often ornamented by a cross, and one even has on it the figure of a Byzantine saint. Several strong places built on steep mountains, formed of dry stones, with remains of walls of dwellings, etc., are assigned to the XII-XIV centuries. Worthy of notice is also the stone age "station" on the north shore of Lake Saanijarvi in the parish of Pihtipudas, recently described by Schvindt. Also the incineration and burial ground of Koonikanmaki in the parish of Kumo, on the left bank of the river Kumo, for which the contents indicate a date from the fourth to the sixth century. Interesting, likewise, are the recent extensive finds of German and Anglo-Saxon coins in various parts

of Finland, of which an account has been published by O. Alcenius. One of these discoveries of coins was made in the parish of Kunsamo in the far north [66° N.] Brief abstracts or these three papers are given by Hackman in the "Centralblatt fuer Anthropologie" [Vol. VII, 1902, pp. 189-191.] The date of the intrusion of the Finns into this area is still a moot question. Some authorities look upon them as its earliest inhabitants, others as late immigrants. There has, however, evidently been in Finland a slow but continuous evolution of culture from the oldest iron age down to the historical period properly so-called. Hence, none of the immigrations that have taken place have been of the nature of conquests.



### NOTES ON THE INDIAN ORIGIN OF THE POLYNESIAN ISLANDERS.

BY C. STANILAND WAKE.

It is remarked by Sir Walter Elliott, on page 157 of the "British Burmah Gazetteer," that "there is no doubt the intercourse between the east coast of India, and the whole of the opposite coast of the Bay of Bengal and the Straits of Malacca, was far greater in former times than at present. It had attained its height at the time that the Buddhists were in the ascendant, that is, during the first five or six centuries of our era." At the commencement of this period was it, that the Dravidian or the Hindu civilization was carried to the islands of the Malay Archipelago from Southern India. Probably, also, at that epoch the Malays extended their migrations eastward before the stream of Indian invaders. Judge Fornander, the author of a well-known work on Polynesian migrations, thinks that the Rakshasas spoken of as pre-Hindu inhabitants of Java were Polynesians, and that they were expelled from the islands of the archipelago. He states that, according to Hawaiian genealogies, the era of Wakea and his wife Papa, the earliest progenitors and the first chiefs of the Polynesian island groups, would be about A. D. 190, corresponding nearly with the spread of the Hindu-Malay family in the Asiatic Archipelago. Mr. Fornander adds, that, although it is obvious from the legends referring to them that the islands now held by the Polynesian race were already peopled in the time of Wakea, and by a people of his own race and kindred, yet "he was anterior to, or at least contemporary with, some great popular movement preceding or attending the first considerable exodus into the Pacific." The Hawaiians ascribe the introduction of *taro* to Wakea, who, according to the most reliable and rational of their traditions was a chief of Gilolo, one of the Moluccas, previous to the Polynesian migrations. His reign was one of great wars and domestic troubles, result-



ing in great changes in the social system of the people, of which probably those migrations were the consequence.

If the Polynesian people under Wakea left the Moluccas about A. D. 190, a still earlier date must be assigned for the departure of their ancestors from the original continental home of the race. Causes similar to those which drove the former to the Pacific had probably compelled the latter to fly eastwards. We have already seen that there were invasions of the Malayan islands from India, in the first century of our era, which occurred owing to the religious struggles between the Brahmans and the Buddhists. These struggles have been supposed to be referred to in the Mahabharata, the later Brahmanic compilers of which, appealed, says Wheeler, "to the old national gods of the Hindus against the practical atheism of the Buddhists," who were characterized by their opponents as Daityas. In the history of Bhima, one of the Pandavan heroes, there are certain narratives which have undoubtedly the air of fiction, but which may be based on fact. These relate to the adventures of Bhima with the Asuras, one of whom destroyed by him was called Vaka. This Asura, like others, is represented as being a cannibal, and Mr. Wheeler thinks that the story has historical significance, "as illustrating the extension of the Aryan supremacy over the aborigines," who appear to have lived in caves in the jungle and to have devoured human flesh. The name *Vaka* recalls the Wakea of Hawaiian tradition and may we not have here the original of the Polynesian hero?

In the course of the adventures of the horse, which form one of the most important features of the Mahabharata, it entered a country where men, women and animals grew upon trees! All the men and animals were monsters. The Raja of the country had for his minister a Brahman, who wore a string of human heads over his shoulder instead of the sacred thread. When the Brahman saw the sacrificial horse he went to the Raja and said, "an enemy of yours has entered this country, whose name is Arjuna, and it was his brother Bhima that slew your father, the Asura." He advised the Raja to seize Arjuna and all his people and perform a Naramedha sacrifice, for which he would collect a number of Brahmans and Saniases, who were cannibals and wine-drinkers. The narrative adds, that the Raja attacked Arjuna but was slain, "and all his forces fled in great confusion, and betook themselves to various quarters of the world and to the islands of the sea."

The preceding adventure of the horse was among the Amazons, who are thought by Mr. Wheeler to have resided in Malabar, the country of the polyandrous Nairs, and to reach Munipore, where the succeeding adventure is placed, Arjuna must have passed through the Deccan. The description given of the Daityas, its inhabitants, reminds us of the aboriginal

tribes of Southern India, with whom, under the names of monkeys and bears, Rama made alliances when he invaded the country to rescue his wife Sita from Ravana, the demon or aboriginal king of the far south. The Brahman minister of the above story, indeed, told the Raja, that the Naramedha was the sacrifice which was performed by Ravana, adding, "by celebrating it you will become a second Ravana"—thus fixing the locality in Southern India. It is true that Bhima's adventure with the Asura Vaka is placed in the neighborhood of Ekachakrá, the modern Arrah, but this may have been a subsequent localization of the incident to suit the exigencies of the story as related by the Brahmanical compilers of the poem; and doubtless Vaka was a chieftain of one of the aboriginal tribes with whom the Hindus came into contact when they advanced into Southern India.

If this was so, the Asura *Vaka* may well be the same as the Polynesian *Wakea*.\* There is some evidence that between 1000 and 500 B. C. there was an exodus from Telinga, of the Dravidian states, to Pegu across the sea, and we may suppose that the movement reached the Indian Archipelago or "islands of the sea" referred to in the legend of Arjuna's adventures in the country of the Daityas. Probably about the same period there was a race movement in the northern part of the Indo-Chinese peninsula. According to Burmese tradition, in the beginning of the tenth century before Christ, the Sakya kingdom of Kapilavastu in Northern India having been invaded, its ruler Abhiraza abandoned his country and crossing the mountains eastward founded a new kingdom at Ta-goung on the left bank of the Irrawaddy. About 500 years afterwards, during the lifetime of Gautama, the kingdom was overrun by the Chinese and its inhabitants driven southwards. About 100 years later, the Khmers made their way from Northern India into the peninsula and penetrated into Cambodia. These various movements from the north must have forced the original Mon-Thibetan population of Indo-China, to which the Malays and the Chams belonged, southwards and given rise to a migratory movement along the Malayan peninsula and into the islands of Malaysia already occupied by peoples of the same race. This movement would compel some of the earlier inhabitants of the archipelago, and among them many of the descendants of the Daityas who had been driven several hundred years before from Telinga across the sea, to proceed further eastwards. Probably at this time some of them reached Gilolo, which appears to have become a starting point for fresh migrations, and to have been subsequently regarded as the home of Wakea, the traditional ancestor of the Polynesian race.

\*It is a curious fact that, according to the Missionary Krapf, the Supreme God of the Gallas of East Africa is called Waka. The Gallas are said to show signs of Indian influence, one mark of which may be the sacred character attached to the fig-tree.



Mr. Fornander supposes the Polynesians to have first settled in Fiji after leaving Gilolo, and not to have reached Hawaii until the fifth century of our era. He thinks, however, that the early Hawaiians arrived at their group by way of Tahiti and the Marquesas, so that there were probably earlier migratory movements from Fiji across the Pacific. These may have been caused, as he suggests, by attacks made on the Polynesian settlers by the Papuan Fijians, but they may have originated in the arrival of fresh refugees from the west. We have already seen, that, during the first five or six centuries of our era, there was great intercourse between the east coast of India and the opposite coast of the Bay of Bengal and the Straits of Malacca. On the establishment of the Chalukya Kingdom in Telingana in the early part of the fifth century great numbers of Buddhists were driven into exile. According to the traditional history of Java various adventurers reached that island during the first three centuries, and many persons crowded to the island about the close of the fifth century. Sir Stamford Raffles states that many of the princes said to have ruled in Java are traceable in the lists of Indian sovereigns, and he mentions that, not only do the princes of Java pretend to derive their descent from Parakisit, the descendant of Arjuna, but the scene of the celebrated war of the Pandavas is laid in Java, where the dwelling places and temples of the heroes who distinguished themselves in it are still pointed out. This is probably not surprising as, according to one account, Méndang Kamúlan, the ancient capital of Java, was founded in the year 600 A. D. by Sawéla Chála, an Indian prince from Gujerat,\* the region inhabited by the Yádavos, the tribe to which belonged Krishna, the friend of Arjuna.

It appears that shortly after the arrival of the expedition led by Sawéla Chála, a prince from the Moluccas established himself in Java. This shows the existence of intercourse at that period between those islands, and perhaps it is evidence of social disturbances in the eastern archipelago, giving rise to the migratory movements throughout the Pacific area referred to by Mr. Fornander as taking place between the fifth and sixth centuries of our era. The kingdom of Jang' gála was founded about 921 A. D. by Déwa Kasúma, a descendant of Sawéla Chála, who is said to have sent his children to India to be educated. The reign of his eldest son Ami Luhúr, who married an Indian princess, was celebrated for the extensive intercourse which then took place with foreign nations. On his death he was succeeded by his son Pánji, who became, says Sir Stamford Raffles, the "most renowned hero of Javan story." He visited the island of Bali and introduced the *kris* into the islands further east, which then acknowledged his supremacy. One of his rivals was a prince of Celebes, who subjugated the

\* The earliest Indian settler in Java reported by tradition was Aji Saka, who evidently was so a native of Gujerat.

neighboring islands and afterwards established himself on Sumatra in the county since called Palémbang. Panji was also called *Si Malayu*, which means a wanderer, and it is supposed by some writers that the Maláys derived their name from that source.\* Sir Stamford Raffles remarks that during that period "some government was established in the other islands of the archipelago, in which a similarity of religion, character and usages prevailed."

During the reign of Kúdu Laléan, the next sovereign of whom mention is made by tradition, there were dissensions in Java, which led one of Kúdu Laléan's brothers to leave for Celebes, on which island he established himself. He is supposed to have been the Sawira Gading of Búgis tradition, the first prince of which it makes mention. That was probably about the end of the eleventh century of our era, and we can hardly doubt the expedition of the Javan prince would lead to a migration further eastward of some of the peoples already settled in Celebes or the neighboring islands. During the fourteenth century the empire of Java embraced Bali to the east and the Sunda islands, with part of Sumatra to the west, and its authority was recognized also by the Southern States of Borneo, which at that period had no regular government. It is remarkable that, according to one tradition as to the peopling of Java and the eastern islands, their first inhabitants were persons who came in vessels from the *Lánt Mira*, or Red Sea, having been banished from Egypt. They are described as being very uncivilized but to have worshipped, some the sun and others the moon, traces of which cults may still be found among the eastern islanders, some of whom are said to resemble peoples of the Red Sea litoral.

\*Sir William Jones, who thinks the Hindus planted colonies in the islands as far as the Molaccas, says that the country of the Malays took its name from the Mountain of Malaya in Southern India.—Dissertations iii, 11.



## EDITORIAL.

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### RECENT DISCOVERIES IN HONDURAS.

One of the strange things about the prehistoric races of this continent, is that their origin and early history is involved in so much obscurity. This is true of the uncivilized races of the north, but it is especially true of the civilized races of the south and southwest. Certain names have indeed been given to these races, and these names have become suggestive of a certain stage of civilization and style of architecture; but as there are no records which can be relied upon, we are left mainly to the study of their works to understand the differences that existed between them. The evidence is that civilization began among the Mayas as early as the Christian Era, and from their original abode in Central America, gradually spread northward until it reached the borders of Mexico, where it was taken up by the far famed Toltecs, whose history is so obscure, and finally was transmitted by them to the Aztecs or Nahuas, who came down from the north and settled in the beautiful valley of Anahuac, or Mexico.

Various writers have undertaken to describe this civilization, some of whom have magnified its importance, and represented it as fully equal to that which appeared in the East long after the opening of history; while others have imagined it to be scarcely superior to that of the wild tribes of our own country. So many cities have, however, been recently discovered in the different parts of this region which have thrown additional light upon the subject, that we are now without excuse if we have not formed a pretty correct idea as to their true character.

Some of these cities lie buried beneath accumulated ruins and have lost all semblance of their original state; others have remained hidden in deep forests, and have only within a few years been discovered.

To these buried cities we shall call attention in this article, and from them gather illustrations which may help us to understand the difference between the architecture of the three races about which we have spoken.

We begin with the city of Copan which is in reality a Buried City, for the most interesting parts of it have long been buried, and have only recently been brought to light by the exploring parties which have been sent to the locality. These ruins are situated in Honduras, twelve miles from the frontier of Guatemala, in a beautiful valley, watered by a rapid running stream, shut in by mountains that rise to the height of about 3,000 feet. The earliest description of them was given

by Palacio, in 1576, who speaks of them as ruins and vestiges of a great population, and of superb edifices, of such skill and splendor, that it appears that they never could have been built by the natives of that province. From Palacio's visit for two centuries and a-half the ruins remained in total darkness, but in 1839 Mr. John L. Stephens visited them in company with Mr. Catherwood, and in 1885 Mr. Alfred P. Maudslay made the first attempt at an extensive and careful exploration. Others have followed, among them Mr. E. W. Perry, in 1889; Mr. Marshal H. Saville in 1891; Mr. John G. Owens in 1892; Mr. G. Byron Gordon, and Mr. A. P. Maudslay 1893; the last three named being under the direction of the Peabody Museum.



PANORAMA OF COPAN.

It may be said that Copan differs from other cities in Central America in several respects. (1) In the first place it is situated on the banks of a stream which is rapid enough to undermine the foundations of the city. (2) Its situation was upon the side of a hill which was so cut down that part of the city containing the Great Plaza was lower than another part on which some of the temples stood, the upper area extending for many feet to the north. (3) The chief point of difference is that underground ruins have been discovered which show great age, as a succession of buildings have been erected one upon the other.

These points have been brought out by the various exploring parties which have been sent to the region under the auspices of the Peabody Museum, from whose reports we shall freely quote.



The interiors of all the raised foundations and buildings, show signs of having been carefully laid for solidity and strength. Some of them have underground walls and interior casings which were the remains of older buildings which had been occupied for a time, and abandoned in the gradual building up of the city. The process thus carried on for centuries without any well designed plan, left the complex mass of structures a puzzle to perplex the explorer. There are other evidences that point to several periods of successive occupation. The river front presents what looks like three great strata divided by floors or pavements. In the interior of the main structure are two enclosed courts; the sides of one are built up in solid seats or terraces as in an amphitheatre. Underneath the courts are two passages, the openings of which can be seen on the face of the river wall, one above the other, and about the same length. The walls of this tunnel are built of well dressed stones, built up in the form of an arch of the usual style, with cap stones bevelled, but with no keystone. There is a constant down slope toward the river. The inner end of the tunnel is about 115 feet from the face of the cliff. Its floor is level with what seems to have been an old plaza now buried about 20 feet below the surface.

On the western side of the court is what Maudslay called the Jaguar Stairway. In the center of this stairway is a structure carved on its face into a huge dragon's or serpent's head, holding in its extended jaws a large grotesque human face. The western court is reached by a fine flight of steps of solid masonry. At a short distance to the south stands the stela and an altar, and above the altar on the slope of the pyramid, a raised structure formed of large steps having in large reliefs in front, rows of what have been called "death heads."

"Another building, one of the largest that has been explored, presents the remains of a grotesque face made of several stones similar to that in Chichen, also three female figure or statues representing singing girls, as the arms extend out in front as if about to clap hands when in the act of singing. Also other statues finely executed. Other sculptured figures are seen in a recumbent attitude, but finished in the round, and a large number of glyphs in which the human face predominates. The stairways are very numerous, and are very well built, but the ornamental carving which would represent the feathered serpent, grotesque human faces, with dress and ornaments, geometrical patterns, vegetable forms and inscriptions make it a notable place."\*

The city contains a large number of pyramids, nineteen in all, of varying heights, some of which were surmounted by temples, others by palaces, and still others by religious houses, and between them were the various courts which are shown in the panorama, the western court, the eastern court, and the

\*See Memoirs of Peabody Museum. Vol. I. No 1. page 12.

great Plaza to the south. The stelæ and altars, seventeen or eighteen in number, are all of them sculptured to represent kingly persons.

Oblong mounds with ruins of buildings on the summit, temple mounds with temples on them, platform mounds with no buildings upon them; broad stairways leading from the courts to the summit of the pyramid on one side, and down to the level on the other side, form a most striking features of the place, but the Hieroglyphic Stairway is the most curious of all.

The Great Plaza has the appearance of an amphitheatre, with ranges of seats or steps enclosing it on the northern eastern and western sides, while the southern side is open. Above the seats is an area which is bounded by a range of steps leading up to a more elevated terrace, on which are what appear to be remains of stone houses. To the northwest of the Plaza, extending as far as the foot hills of the mountains, is a large group of mounds buried in a dense thicket, and to the west another group and many pieces of sculpture, and scattered remains along the sides of the river for a distance of eight or nine miles. The sculptures from the terraces are also very interesting.

The monoliths, or sculptured columns, twenty-three in number, fifteen situated in the Great Plaza, present the most elaborate specimens of sculptured art. The average height is twelve feet, the average breadth, three feet. Ten or fifteen feet from the base of each is the altar.

Palacio says: "Six of the statues represent men covered with mosaic work, and with garters round their legs, their weapons covered with ornament; two were women with long robes and head-dress. They seem to have been idols, for in front of each is a large stone with a channel cut in it where they executed the victim, and the blood flowed off."

The most conspicuous form in the altar represents some fanciful grotesque animal; the glaring eyes and open jaws extending out from the side as if designed to excite terror in the spectator. It may be said that a similar altar has been recently discovered in the city of Mexico at a depth of about 20 feet.

There are other evidences that point to several periods of occupation. The river front presents what looks at least three great spaces divided by floors or pavements of mortar cement.

If these floors mark the various levels corresponding to different epochs in the history of the city, the question of the age of the ruins becomes still more complicated; for between each successive period of occupancy, there is the period of silence, the length of which can be inferred from the thickness of the structure. We see then that the history of the Maya race is written upon the ruins of the cities which were occupied, but the same is also true of the celebrated Toltec race. We shall therefore return to the buried cities, which are supposed to have been occupied by that remarkable people.



"The principal ruins are grouped around what has been called "the main structure," a vast irregular pile rising from the plain in steps and terraces and terminating in great terraced elevations; each topped by the remains of a temple. The summit of the highest of these is about 130 feet above the level of the river. \* \* The walls of the buildings and the outer casings of the terraces and pyramids are built of stone, neatly cut in flat-faced oblong blocks and laid in parallel rows. All these stone walls and casings appear to have been plastered, and the plaster decorated with paintings. There are many evidences that point to several periods of occupation as the river front presents, three great strata divided by floors or pavements of mortar cement.

"In the interior of the main structure are two enclosed courts paved with mortar cement, being sixty-five feet above the river. The sides of one court are built with solid stone work in seats or terraces as in an amphitheatre, beneath which was a tunnel formed by an arch of well dressed stones, large enough for a man to crawl through. A broad flight of steps leads to a narrow platform called by Maudslay the 'Stairway,' and in the center of the stairway a sculpture carved into a huge dragon's or serpent's head, holding in its extended jaws, a large grotesque human face; also a very well laid flight of steps with two large grotesque faces, and a human figure seated on a human skull, supporting in his hand the head of a dragon.

"There is another grand stairway the ruins of which impress upon the beholder a deep sense of its vastness and complexity and force upon him a conviction of what must have been from the beauty of its situation and the barbaric architecture, the effect of the city in its prime. Each step has a row of hieroglyphics running the entire length of its face, and for this reason has been called the 'Hieroglyphic Stairway.' In the plaza are thirteen stelæ, each having in front of it a sculptured block of stone, to which the name 'altar' has been applied. In the plaza is a pyramidal mound with stone casing in the form of steps.\*"

A part of the Hieroglyphic Stairway, was first discovered by Mr. Owen in 1892. It appears that this stairway had been buried from the sight of previous explorers, by a landslide which had occurred at some unknown date, and which carried away the whole upper part of the stairway from its position, and covered the lower part, leaving only ten entire steps in their original position. A large altar was built into the stairway at the base. The top of the altar consists of four large slabs let into the steps. The sides were elaborately carved. Above the altar was a large seated figure built in

\*The cut represents fragments of the stairway, taken out and laid in order below the pyramid, along with them the statue finished in the round, which was found near the middle of the stairway. There was an altar at the base of the stairway, and a seated figure halfway up, which seemed to be guarding the whole.

three pieces of stone, let into the center of the stairway. It represented a royal person arrayed in the usual elaborate adornment, with a massive crocodile head or crotalus jaw forming its crown. The figure was seated on a couch which was carved to represent drapery and fringes. The figure itself was represented as clothed with embroidered garments, every part of which was trimmed with cords and tassels, and covered with various raised figures. The usual sash or maxtli hanging gracefully down between the legs to the feet, which in turn were covered with highly decorated moccasins which resembled greaves, above which were fringed bands and tassels, making an ornament for each leg but left the knees bare.

A necklace of costly beads or shells hung upon the breast, and below it a cape set with jewels and precious stones. The



HIEROGLYPHIC STAIRWAY AT COPAN.

crown was hidden away underneath the massive jaws which turned the beauty into a hideous creature, thus mingling symmetry with deformity, and awakening in the spectator at the same time admiration and terror. A stela was also found on the stairway in a horizontal position, which resembles the stelæ which Stephens discovered in the Great Plaza; the only difference between them consisting in the fact that this was on its side, and the altar was below it, while those on the Plaza were standing erect and had the altars before them.

The significance of the stairway is that the inscription contains a chronological record which embraced long periods of time. The beginning glyph contains an initial date at the top of the staircase, but the finishing date was at the bottom



of the staircase. The glyphs on the stelæ which stand in the Plaza, perhaps correspond with those on the stairway, and refer to the year in which each was erected.

There are disconnected fragments in the stairway which represent human figures finished in the round, but lying on the side, the crowned head resting upon one arm, the legs crossing one another, but the wrists and ankles covered with the usual ornaments, while the fringed sash surrounds the waist, and the embroidered maxtli is in the usual place.

We may say of this Hieroglyphic Stairway that it is the most elaborately carved piece of work that has ever been discovered, and it shows the patience with which the sculptors



SCULPTURED TIGER FOUND BENEATH THE CITY OF MEXICO.

of this half civilized people did their work. It reminds us of the rock-cut temples of the Hindus, and especially those found in the Island of Java, where the temples were cut out of the solid rock, yet were covered with the most elaborate ornaments, the receding stones being carved into a great variety of figures.

There were at Copan certain ghoulish-looking sculptured figures which resemble those recently discovered in the City of Mexico, twenty feet below the surface, showing that there was a transmission from the Mayas to the Nahuas of symbols and ornaments in prehistoric times. Mrs. Maudslay speaks of those in the palace at Copan. She says

Up to the time of this expedition in 1885, no traces of any houses had been discovered, but I found it difficult to believe that the great masses of masonry would have been built unless they were meant to serve as foundations for temples. As the work of clearing proceeded and we gained a better view of the great stairways and the outlines of mounds, my hopes of finding some trace of a temple was strengthened. Judge, then, of my delight when digging on the north side of the east court, I came on the unmistakable signs of a doorway, and the remains of an elaborate cornice running along the top of the interior wall of the chamber. \* \* \* \* \*

The peculiarity of this doorway was that on either side of it and over the top there were carved in bold relief, a series of gruesome figures, consisting of grinning skulls which looked out from the pedestal. Above these, on either side, was a human figure, distorted and bent, and apparently in agony, supporting with his hand some monstrous reptile head, and above this a distorted human figure.

Another important feature of Copan is the one spoken of by Stephens and by all other explorers. It consists in the



ANIMAL ALTAR FOUND BURIED IN THE CITY OF MEXICO.\*

number of sculptured columns or stelæ which represent either the chiefs and priests, or the divinities which were worshiped; probably the former, though it is difficult to decide, for the tendency of the times was to exalt the kings and priests almost to the level of the divinities, and to surround the palaces with even more magnificence than they did the temples. This explains the difficulty of identifying the statues or sculptured figures on the stelæ, and the fact that altars were placed before them increases the difficulty. The figures represent kings and queens who have been well fed, and who are magnificently clothed and covered with ornaments, but the divinities were

\*The figure represented in the cut was found in 1901, while excavating for the foundations for the new Hall of Justice and Public Instruction. It is of basalt, 7 feet 6 inches long and 3 feet in diameter. A hollow in the back is 17 inches wide and 10 inches deep, and on the bottom of this cup are carved the emblems of the Tezcatlipoca, the God of Death. It was evidently used as a vase to receive the hearts of human sacrifices, and was in the Temple of Tezcatlipoca. The stone was originally in the colors of the living tiger. It weighs four tons, and the figure is gruesome. An account of it was published in the Scientific American and was illustrated by the cuts used above.





STELA AT COPAN.



STFLA AT COPAN.



full of supernatural powers, which are represented by their faces and forms, and especially by the many symbols by which they were surrounded. It may have been the purpose in placing the altars before the statues of kings and priests, to increase the awe and fear which the people felt toward their rulers, and so increase their power, the religious sentiment and the sense of loyalty conspiring to make a wide separation between the people and the priests.

This same tendency seems to have prevailed in Mexico, for altars, carved in the shape of animals with glaring eyes and open mouth, have, as we have said, been discovered at great depth beneath the streets, suggesting the idea that before the time of Montezuma the same styles of art which have been so common among the Mayas at Copan, had been introduced into the city of Mexico; and it was the same element of fear which the kings and priests appealed to, the people being in abject servitude to their rulers.

This is in accord with the architecture of the ancient Mayas, for it seems to have been the chief effort of the sculptors to make the priests and kings as attractive as possible, but to place before the temples figures of animals and other creatures as terrifying as possible, as the chief element of religion was fear.

Many other cities have been discovered in Honduras which have been buried for many years. The city of Lorillard was discovered by Charnay in the year 1884. The number of monuments was estimated at fifteen or twenty, consisting of temples, palaces, and huts of the lower orders. These buildings, some sixty-five feet from the river, were supported on terraces rising in ampitheatre and resting on natural hills, which the builders made use of to save labor. They are usually faced with stone, have a central flight of steps, but are not so richly decorated as similar edifices at Palenque, but the inner decorations and the figures on the bas-reliefs are the same, and the general arrangement of the buildings is similar.

A temple on a mound 120 feet high, contained a great stone idol, the face completely mutilated, but bearing a great plumed headdress, and having on the shoulders the jeweled cape or necklace. The temple is pierced with three stone lintels, finely carved in the shape of lattice-work, resembling those at Kabah and at Uxmal. In the great frieze, three large panels were occupied by statues, which were still standing.

On an esplanade were six palaces forming a rectangle, one of these palaces having stone lintels finely sculptured. On one of these lintels were two figures with retreating foreheads, having the usual high headdress of feathers, cape, collar, medallion and maxtli, while their boots are fastened on the instep with leather strings, as similar figures are at Palenque. Each holds in hand a Latin cross; rosettes form the branches and a symbolic bird crowns the upper portion, while twenty-

three katunes or glyphs are scattered about the bas-relief. This was a symbolic representation of Tlaloc, whose chief symbol was a cross, which here consists of palms or maize leaves. (See cut.)

Two lintels from a small ruined edifice at the foot of a pyramid, represent two human figures; the one, holding a sceptre in hand, wears the usual dress of a king; the other exhibits a ceremony which was common: pulling the knotted cord, armed with thongs, through the tongue as a penance. Another temple, with two inscriptions on stone lintels, resembling those at Chichen and Copan, were found at Lorilla.



SCULPTURED FIGURES ON LINTEL AT LORILLA RD.\*

An altar panel in the temple of the Sun at Tikal is described by Maudslay, and a bas-relief on wood, which was a facsimile of the panels in the rear of the altar at Palenque. Other panels, consisting of scattered pieces, are seen on various monuments. Some of them contain inscriptions which are in perfect condition and furnish important analogies. A stela at Tikal resembles in some respects those at Copan, but differs from them in that the decorated figure stands so as to present a side view, but it is covered with the same gorgeous array of feathered headdress, jewelled cape, fringed garment, embroidered maxtli, ornamented sandals, wristlets and other articles.

\*The decorations on these figures are quite similar to those on the stelae at Copan.



We see in all these figures a display of barbaric magnificence, which is perfectly surprising when we think of the distance of these cities from any known civilization,—but this shows that there was a development on the soil of America which was certainly equal to that found in Babylonia or in Egypt at the opening of history, and even superior to that which existed in some parts of Asia at the time of the Discovery.

Other cities have been found in Umatsintla Valley and at Piedras Negras, which resemble those just described.

Mr. Teobert Maler has spent considerable time in examining these, and has made a report of some of them to the Peabody Museum of Archæology. He speaks of one locality named Chinikika, in which was a great pyramid, rising in several terraces, forming the substructure of the principal temple. Adjoining this is a pyramid, supporting an extensive palace, with several courts. On one side of the main court is a row of entrances, which are arched over with triangular arches. Here, was an altar covered with hieroglyphics, or incised inscription, upon its upper surface. At Chancila, he discovered a temple on the summit of a pyramid, with a broad flight of steps leading up to it, the frieze of which has a heavy cornice, but the interior was finished with an arched ceiling.

At Xupa, he discovered temples resembling the three well-known temples of Palenque. The inner chamber of one was painted a fiery red, faced with stone slabs, on which were the outlines of a lovely female form, having a high and graceful headdress, a pure Maya profile, a collar of network of beads, and a disk on the middle of the breast.

At Piedras Negras, he found the most interesting series of monuments and ruined buildings, which constituted the different parts of a city, and which was, perhaps, once as magnificent as Palenque itself, and what is more, a series of altars and slabs on which were sculptured some of the most interesting figures that have ever been found on this continent. Here was a platform with a stone stairway leading to the second terrace, which was adorned with eight large stelæ, on which are sculptured many highly-wrought figures. Above this platform were the ruins of two temples, and still farther up was an Acropolis, the only one that has been discovered in this entire region. The description of the stelæ is contained in the report, and illustrated by a series of heliotype plates. It is impossible to describe these in the short space left us, but they show the barbaric splendor with which the kings and princes or the ruling classes of this region adorned themselves. From them we may learn much concerning the textile fabrics, the feather work, the jewels, and jewelled breastplates, necklaces, capes, wristlets, bracelets, anklets, diadems and crowns which were worn by old and young. Nothing has come down to us from the ancient Mycænian times of Greece, or from the Babylonian Empire, that exceeds in elaborateness of orna-

ment and decoration, the dress and regalia worn by these mysterious and unknown princes. There was a barbaric splendor which has long since passed away, but was most surprising in its variety and abundance.

The figures of kings and queens, and even of the royal children, are represented on the slabs and stelæ, and even by the sculptured ornaments upon the piers and lintels of the palaces, which are truly astonishing. There are statues extant in England and in this country, one of which is in the possession of the writer, which represent Sardanapalus and his queen, the proudest monarchs of the Babylonian Empire, but, if we are to judge from comparing these with the sculptured figures upon these slabs, found in the midst of the deep forests of Central America, we should say that more expense and effort had been laid out by the unknown monarchs of this region in decorating their persons and the forms of their children with habiliments of royalty; than by these kings of the East. There is a profusion of jewels and of precious stones and finely-wrought needle-work and feather-work, which was unknown in the palaces of the East, all arranged so as to astonish the eye by their brilliancy.

There were other half-ruined structures containing remains of chambers, arched vaults, ruined vestibules, and numerous stelæ. A rectangular sacrificial table or altar, resting upon four pillars, was found. The description of the different stelæ and the figures represented on them are given by photographs. It appears from the description that the royal personages were portrayed as arrayed in all their gorgeous attire, but in various attitudes; some of them standing erect, covered with woven garments of various shapes and patterns, mainly with fringe edging, and held in place by jewelled belts. On the head were gorgeous crowns, above which many-colored plumes which reached to a great height, gave an imposing appearance to the person. In the hands of some of these persons were plumed wands, but the hands of others were placed upon the heads of captives, or were holding long spears which penetrated the bodies of the captives. The faces of the captives were turned upward, as if in an agony of supplication, but the face of the officer suggests triumph and power.

Some of the stelæ represent figures of gods or kings draped in royal garments. The one that is shown in the cut represents a female, probably a queen, looking up to a child which is seated upon a throne above. The child has a gorgeous crown upon its head and a jewelled cape upon its shoulder. The throne itself was supported by a framework, which was evidently very elaborate and highly ornamental. Mr. Teobert Maler thinks it was a god which occupied the upper part of the stelæ, but, if so, the attitude and dress and general appearance was very human. The following is his description :



On the lower base line stands a person of rank, in profile, looking up to the god in the niche. He (she) is dressed in a long tunic which extends to the feet. In the right hand is a little leather bag, tied up with a fine cord, and in the left, a flabellum of green feathers with a red handle. At the feet of this exalted personage is seen a victim, thrown on what no doubt is a tigerskin, the face hanging down over the edge of the stone. The scroll work and the structure of beams resembles that in Stela 11.

Bright red scroll work runs up the right and left edges of the niche as far as the curtain, which is divided into four parts (that is, tied up with cord in three places), and has a horizontal band of six simplified glyphs (second manner of writing) above it. Above this band is a fantastic green mask, with red eyes and mouth. It is crowned by a diadem of large discs, with scroll work on either side and feathers on top.

All the sculpture described above, is in very low relief, but the bright red god, who sits enthroned cross-legged in the niche, in Asiatic fashion, is in very high relief, and is represented in front view. His right hand rests upon his right knee; his left hand, now broken off, held an ornamental pouch, with the appendage of conventionalized rattles, which, in this case, does not hang over the edge of the niche, but lies upon the floor. The breast is covered by a green cape of scales and a horizontal breastplate, but the latter is very much injured. The bright-red face of the god is smooth and beardless. The lips are wide apart, as if the god were speaking to the people. Large round ornaments are in the ears. The head is crowned with an elaborately executed serpent's head, surmounted by a fantastic human head. Both are for the most part green, the eyes and mouths only being red. The teeth in the serpent's mouth are saw-shaped. The little head is in its turn surmounted by an oval with the closed hand, which, being contiguous to the curtain, leaves no room for a crowning plume of feathers. Green feathers fall each side of the headdress.



SCULPTURED SLAB.

There are many other figures sculptured upon the stelæ, kings or gods seated upon thrones and within niches, but they are always crowned, and have the jewelled cape upon the shoulders. One stela represents a seated figure in what may

be called "European fashion" upon a stone bench, covered with a tiger skin. Both hands hold a sceptre with a grotesque face. In front stands a second personage, with a tiara upon his head. A snake curves down and over the two personages. Two emaciated and apparently dying forms appear upon the scroll work, while a third form, with extremely expressive countenance, bends down over the curved form of the serpent. Above all, is the bird, not unlike that which surmounts the cross at Palenque.

A warrior of high rank, represented in front view, holds a lance with a fantastic face in his right hand, a shield and an ornamental pouch on his left arm; his tunic, falling to the knee, has elaborate feather-work in front and a border of sea-shells. The girdle is almost, or quite, covered up, and from it fall sash ends, which appear below the feather garment and exhibit an elaborate pattern of Maya embroidery. The ankles and knees are encircled by ornamented bands.

To the right of the warrior chieftain, a captive kneels on the ground, with his arms bound together, holding his toothed sword, point downward, in his right hand. The distinguishing mark of a captive, in the form of two little glyphs, is carved upon the sword.

A buried city, or rather buried temple, has been recently discovered near the village of Carozal in Honduras. The site chosen by the builders, is one of the most favorable for many miles around, as it is on an extensive plateau 50 to 100 feet above the sea level, and about one mile inland. The soil upon the plateau is remarkably productive. The only apparent drawback was the fact that the nearest fresh water was several miles away, but the defect was remedied by the construction of underground reservoirs. The site was marked by about twenty artificial mounds, some of which were constructed over buildings; others contained pottery images near the surface, and on the ground level, painted pottery animal figures. The most remarkable feature of the locality, is that the mound-buried rooms, present a series of mural paintings, or frescoes, which contained the same figures that are seen in the temple at Palenque, but painted on the wall, rather than sculptured in stucco. One mound, near the edge of the plateau, was 86 feet long, 66 feet wide, and 14 feet high. A wall was discovered in it, about four feet below the ground level, with a triangular stone cornice, and above the cornice roughly-squared stones. The paintings, or frescoes, were on the wall inside of the rooms, and were in a good state of preservation. The floor was on a level with the ground outside. A plain stucco covered the interior of the building, but the painted stucco was separated from this by a layer of friable clay, which could be removed without damage to the painting.



## THE CHEROKEES.\*

Linguistically, the Cherokees belong to the Iroquois stock, and were probably the Talligewi referred to in the Walam Olum of the Iroquois. Haywood concludes that the authors of the most ancient remains in Tennessee had spread over that region from the south and southwest at a very early period, but that the Cherokees entered from the north and northeast in recent times.

The Cherokees claim to have built the mounds on the upper Ohio. They, according to Haywood, disclaimed the authorship of the mounds and petroglyphs in their later home territory, asserting that these ancient works had exhibited the same appearance when they themselves first occupied the region. This confirms Bartram's statement that the Cherokees, though sometimes utilizing the mounds as sites for their own town houses were as ignorant as the whites, of their origin or purpose. Haywood says that there is considerable evidence that the Creeks preceded the Cherokees, and claimed the Tennessee, or at least the Tennessee watershed, for their northern boundary. There is a dim but persistent tradition of a strange white race preceding the Cherokees, who were the authors of the ancient works in the country.

Barton in 1797 says: "The Cherokees tell us that when they first arrived in the country they found it possessed by certain moon-eyed people, whom they expelled." Haywood says: "The invading Cherokee found white people near the head of the Little Tennessee, with forts extending down the Tennessee as far as Chicamaugua Creek." Elsewhere he speaks of this extirpated white race as having extended into Kentucky and Western Tennessee. He describes their houses as "small circular structures of upright logs, covered with earth."

The definite history of the Cherokee begins with the year 1540, at which date we find them already established in the mountains of Carolina and Georgia.

The earliest Spanish adventurers failed to penetrate so far into the interior, but while at Cofitachique, the celebrated town which was governed by the queen who came forth to meet them in her canoe which was covered with a canopy, and attended by her warriors and chief men, the Spaniards found hatchets and other objects of copper, and on inquiry found it had come from an interior mountain province called Chisca. They turned northward, passing through several towns belonging to the queen, and in a few days came to a province called Chalaque. Travelling still to the north they arrived at the province occupied by the Cheraw Indians, in the Piedmont region of North Carolina. Here they turned to the west, crossing the Blue Ridge, and reached one of the tributaries of

\*Nineteenth Annual Report of the Bureau of American Ethnology. To the Secretary of the Smithsonian Institution. 1897-1898. By J. W. Powell, Director. Jas. G. Mooney.

the French Broad, and after several days arrived at the town of Guaxule. The chief and principal men came out to meet them, dressed in the fine robes of skins, with feather-head dresses, after the fashion of the country. Leaving this place they proceeded down the Chattahoochee River and came to a frontier town of the Cherokees called Canasagua; but crossing the state of Georgia, leaving the Cherokee country, they found themselves among the Creeks, in the province of Coca. De Soto made no further effort to reach the Cherokee mines but continued his course westward through the Creek country though he sent two soldiers with Indian guides to find Chisca.

In 1566, the Spaniards, under Juan Pardo, penetrated the Cherokee country, and the sargent marched about a day's distance into the mountains, where he found a strongly palisaded town, and then proceeded to the territory of a great chief to a town called Chiaha, where De Soto had rested. It is described as palisaded and strongly fortified, with a deep river on either side, and defended by 3,000 fighting men. They received the white men with the greatest kindness. The combined force afterwards went on through the Cherokee towns to the Creek towns in the Alabama country, having met with a friendly reception all along the route.

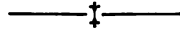
The existence of mines of gold and other metals in the Cherokee country was a matter of common knowledge, and more than one expedition had been fitted out to explore the interior. Numerous traces of ancient mining operations, with remains of old shafts and fortifications evidently of European origin, show that these discoveries were followed up.

It was not until 1654 that the English came in contact with the Cherokees. In that year, the Virginia colony was thrown into alarm by news that a great body of 600 or 700 Indians from the mountains had invaded the lower country. It is probable that they were the Cherokees. In 1670, the German traveller, John Lederer, went from the Falls of the James River to the Catawba country in South Carolina. In 1693 some Cherokee chiefs went to Charleston, to ask protection of South Carolina against their enemies, the Catawbas and the Savannahs. In 1715, a force of several hundred white troops went up the Savannah, and made their headquarters among the lower Cherokees. In 1721 the Governor of South Carolina invited the chief of the Cherokees to a conference, at which thirty-seven towns were represented. In 1730, seven chiefs were selected to visit England where, in the palace at Whitehall, they made a treaty acknowledging the sovereignty of England. In 1740, a trading path marked out by the Cherokees from the new settlement of Augusta, Georgia, to their towns on the Savannah River, and then on to the west.

A Jesuit, named Christian Priber was among the Cherokees in 1736, and drew up a scheme of government with a capitol at Great Tellico, in Tennessee. He was a gentleman of polished



address, extensive learning and rare courage. He was acquainted with the different languages—Greek, Latin, French, German, Spanish and English—and spoke Cherokee. He was seized by the English traders, and was imprisoned at Fredrica, Georgia, and soon after died from the confinement. Among his papers was found a manuscript dictionary of the language.



## ANTHROPOLOGICAL NOTES.

BY ALEXANDER F. CHAMBERLAIN.

**HOME OF THE ARYANS.** In his "Die Heimat der Indogermanen im Lichte der urgeschichtlichen Forschung," (Berlin, 1902, pp. 311), of which a review by Dr. Kraitschek appears in the "Centralblatt für Anthropologie" (Vol. VII, 1902, pp. 282-285), Dr. Matthæus Much joins the increasing company of those who seek the primitive home of the Aryans somewhere in northern Europe. He concludes from the neolithic remains (due to the Aryans) that the west Baltic region was the place where the Aryans dwelt together before the dispersion, and from which they migrated in various directions. Much does not share the view of Montelius that the beauty of certain Scandinavian objects of the stone age is due to Oriental influence—the Trojan region is rather an outlier of the stone-culture of Europe than a center for influencing it. He takes the ground that from the most primitive forms of stone implements furnished by the Danish shell-heaps and the finds of the Swedish coast to the most perfect and most beautiful tools of this age, there exists *in loco* an uninterrupted developmental series. Indeed, the further one proceeds from the north, the rarer and simpler they become. Northern Italy and France, *e. g.*, show much closer relations with the west Baltic stone implements than do the southern parts of these countries, while in the Iberian peninsula entirely different forms put in an appearance. The use of jadite and nephrite and of turquoise do not prove an Asiatic origin for the Aryans. Spiral decoration, Much thinks, originated, not in the Orient, as many suppose, but in all probability, took its rise in the Harz-Saale country, from which point it migrated with the Aryans. Amber appears in the Mycenæan graves of Greece only after it was widespread in neolithic times in northern and central Europe. Since chemical evidence assigns this amber to the Baltic, its spread by migration of peoples, or through the channels of primitive trade is made certain. The absence of distinctly Mycenæan objects in the north leads Much to conclude that migration, not commerce, is responsible for the spread of amber in southeastern Europe. With Penka, Much holds that megalithic graves arose first in the west Baltic region, and were

thence spread by migrations of Aryan peoples, rather than that their origin is due to the spread of Oriental religious ideas. It took Christianity 1000 years to reach Scandinavia from the Orient, and religion had, perhaps, harder faring in primitive times. With Reinach, Much considers that the domestic animals of the neolithic inhabitants had their stock-forms in the continent, so the origin of their domestic animals can no longer be used as an argument in favor of the Asiatic theory. Climatic reasons forbid the development of so active a race as the Aryans in Central Asia, whereas the west Baltic region of northern Europe offers all the most favorable conditions for the European origin of the Aryans. Much has added to the data of Penka and others who preceded him.

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THE BEHRING SEA RACE. Anthropologists of all countries are awaiting with interest the publication of the osteological, ethnological, folk lore and linguistic material accumulated by the Jesup North Pacific expedition in northeastern Asia. Such evidence as has already been set forth suggests a long continued inter-migration and interchange of inventions, customs, myths and ideas in this region, making it one of the special "culture areas" of the globe.

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#### EDITORIAL NOTES.

TWELFTH CENTURY PAINTINGS have been recently discovered in the Church of All Saints, Shropshire, England. On them were depicted thirteen horses and their riders in pairs, armed with swords and lances. The men wear mailed shirts combined with leather coverings. Over their armor they have surcoats, and they wear flat-topped helmets with barred and grated visors, and kite-shaped shields, horse trappings and saddles of quilted leather.—*The Antiquary, January, 1903.*

DRAUGHTBOARDS AND CHESSMEN IN EGYPT. The ancient Egyptian game is said to have been invented by Thoth, and Hermes played with the moon and won five lunar days. There are several specimens of draughtboards. The earliest, made of alabaster, were found by Professor Petrie in the royal tombs of Abydos, in the period of Menes. They are made of ivory, and in various shapes. Some have the heads of animals, such as the jackall, and some human heads. A religious meaning is attached to the game, but they are sometimes made as caricatures. Among these, a lion playing draughts with a she-goat. Egyptians were accustomed to play solitarie also, or rather the soul of the deceased Egyptian was represented as playing draughts alone.—*Proceedings of the Society of Biblical Archaeology, December 10, 1902.*

**THE LANSING MAN.** The question of the antiquity of the bones of the Lansing man has been discussed in a recent paper by Prof. Chamberlin, in the *Journal of Geology*, Vol. X: (1902), pages 745 to 779. He points out that the Missouri River changed its course eight years ago, having been very near the deposit in which the bones were found. He gives a diagram which shows the changes in the Missouri River at Blair Bridge, Nebraska, and says: "An inspection of the diagram will show that a skeleton might have been deposited on the surface of the Carboniferous rock bottom, much as in the case of the skeleton at Lansing, on the 28th of July, 1883, and have been buried in alluvium as deep as the the Lansing skeleton by August 18th—only twenty-one days later." He holds that the deposit in which the Lansing skeleton was found, is not in true original loess, but, "in a mixture of loess-like silt, Carboniferous detritus, waterlaid clay, and other debris." The human remains were buried by the deposit left by the streams, and were not connected in any way with the original deposit. "The antiquity of the burial is measured by the time occupied by the Missouri River in lowering its bottoms, two miles or more in width, somewhere from fifteen to twenty-five feet, a very respectable antiquity, but much short of the close of the glacial invasion." This, then, throws the paleolithic age of man in America again into doubt, and leaves America still a New World, as it has been called. If the remains had been found in almost any locality east of the Mississippi River and south of the Great Lakes, we should be on ground where there is evidence of a complex succession of population. In this region there is no evidence of such a succession. Still, the acceptance of the evidence that the Little Falls, (Minn.), finds were genuine paleolithic relics would naturally lead some to welcome the finding of this skeleton as confirming their position.

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**THE ORIGINAL ABCDE OF MAN.** An article has been received from Mr. Staniland Wake, which throws some light on the relative antiquity of man in America and Asia. It is to the effect that the population of eastern and southern Asia was at an early date, and still is, much greater to the square mile than it was in America at the time of the Discovery, and suggesting the idea that the migration must have been from Asia to America. The beginnings of history also confirm the same point, for these beginnings date back more than half way to the close of the glacial period, and we have the other half of that period for prehistoric man to have made his progress from the paleolithic through neolithic before history began. It is still the claim of many that Europe contains the earliest evidence of man, and, therefore, must have been the starting point, rather than Southern Asia, which according to tradition

and Scripture, and recent discoveries, may be claimed as the original home. Another evidence in favor of the orthodox theory is that the largest amount of population by far has been found in Eastern and Southern Asia, and the smallest population to the square mile was found in this very region, which is bounded by the territory through which the Missouri River flows.

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THE BEAST FABLE is one of the most ancient and wide spread. There are traces of its existence in the sacred writings of Judea, in the cuneiform inscriptions of Babylonia and Assyria, and in the paintings and sculptures of ancient Egypt, where its popularity may doubtless be attributed to the reverence in which animals were held, and the large place they had in national religion. Four excellent examples have been preserved among the records of Assur-bani-pal's library, and the relating to the actions of an eagle and a serpent; the second, to those of a fox and a jackal; whilst the third describes an interview between an ox and a horse, and in the fourth a calf speaks. The familiar story of the lion and the mouse existed on papyrus as early as 1166 B. C., in the days of Rameses II., and then not merely as a crude attempt, but as a finished transcript from some earlier source.—*The Antiquary, Jan., 1903.*

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GIFT TO COLUMBIA UNIVERSITY. The Duc de Loubat has given \$100,000 for the founding of a professorship of American archæology in Columbia University. This is the third chair of archæology which the Duc has endowed. He was donor of similar chairs in the University of Berlin and the University of Paris. In accepting the offer of the chair at their regular monthly meeting the trustees of Columbia chose for the first professor Marshall H. Saville, Curator of Archæology at the Museum of Natural History (New York) and Vice-President for Anthropology of the American Association for the advancement of Science. He will begin his work at the beginning of the next academic year.

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AMERICAN ORNAMENTAL ART is very graphically described by M. Stolpe, of Sweden, in the *Compte Rendu* of the International Congress of Americanistes, Twelfth Session, held at Stockholm. The Iadians of northwestern Mexico are described in the same report by M. Hartman.

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A FOUNT WITH RUNIC INSCRIPTION. A baptismal fount of Anglo-Saxon times has been found at Bingley, Yorkshire, England, supposed to date 737 A. D., the time of Eadbert.—*The Antiquary, Jannary, 1903.*



**BIBLICAL ARCHÆOLOGY.** A complete history of all the discoveries of the Century is soon to appear in Biblical Archæology. Professor Hilprecht, the director of the American Expedition, which has lately made the educational library discovery, edits the book, and writes on Babylonia and Assyria; Benzinger writes on Palestine; Jensen, on the Hittites. All the great "finds" will be illustrated in the book.—*Expository Times, January, 1903.*

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**REV. W. M. BEAUCHAMP** has in his possession the ancient Mss. containing the condolence songs of the Iroquois, from which Dr. Horatio Hale drew his information. Also a Mohawk version of the greater condoling songs. These are of untold value to ethnology.

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**JADE.** The finest collection of jade ornaments in the world is now in the Metropolitan Museum of New York, the gift of H. R. Bishop, who has spent many years in collecting it. It numbers more than 1,000 specimens. A finely illustrated catalogue, containing an archæological, mineralogical and geological description, has been prepared by Mr. Kunz, assisted by many others, at the cost of about \$100,000, which was furnished by Mr. Bishop. Only one hundred copies are to be printed.

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**DR. CYRUS THOMAS** has two long articles in the Nineteenth Annual Report of the Bureau of Ethnology: one on the Maya Calendar, and another on the Numerical Systems of America and Central America. It is a pity that there is no key by which the hieroglyphics of Central America can be deciphered, for it is now over twenty years that the scholars in this country and Europe have been studying them, and yet they are involved in about as much mystery as ever.

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**THE SNAKE DANCE** is described by J. Walter Fewkes in the Nineteenth Annual Report of the Bureau of Ethnology, and the last Bulletin of the Field Columbian Museum contains also a description prepared by the Rev. Mr. Voth and G. A. Dorsey. Both articles are fully illustrated. It is a grewsome ceremony, and does not improve or grow upon ones interest when it is studied, for there is not so much real symbolism as in many other ceremonies.

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**ARCHÆOLOGY IN MEXICO.** An Academy of Science has been formed in New Mexico, and two papers on archæology have been read, entitled, "Notes on the Pecos Indians," and "Reconnaissance of the Chaco Cañon."

THE ACADEMY OF SCIENCE OF WISCONSIN has no person on its committee, and apparently no member, who is qualified to pass judgment on archæological papers. All papers on the subject are sent to some nameless unknown individual, who passes judgment outside of the society, without responsibility.

THE CARNEGIE INSTITUTION has eighteen committees in charge of the various departments. The first in alphabetical order is the one on Anthropology, with W. H. Holmes, Frank Boas and W. A. Dorsey as members.

THE TAR BABY. The story of the "Tar Baby" is supposed to have belonged originally to the negroes of the South, but like many other stories, such as "Brer Rabbit," and "The Tortoise and the Hare," is found among the Cherokees. The origin of it is unknown. The myths among the Cherokees have relation to the wild animals, such as the buffalo, elk, deer, bear, wolf, fox, beaver, rabbit, possum, ground hog, turkey, partridge, crane, pheasant and buzzard. Some of these are told by the negroes, but are made more comical than those that are told by the Indians.

THE BEAUTIFUL BROKEN BRONZE STATUE OF MERCURY, found at the bottom of the sea in 1901, has been pieced together by a French expert. It is rather more than life-size, is of the finest Greek workmanship, and is said to rival the exquisite marble Mercury of Praxiteles found at Mount Olympia in 1877. The latter has been deemed the most beautiful statue in the world. Many other bronzes and marbles were found at the same time as the Mercury, but were so corroded and eaten away as to be valueless. This is the only extant example of an undoubted original bronze statue of the fourth century before Christ. No one can safely prophesy or even conjecture what will be found in the present century. An archæologist recently declared his opinion that not one-tenth of the valuable remains of antiquity which exist have been located.

ASTARTE had a more real personality than any other Phœnician Goddess. She was the Istar of Mesopotamia. She was identified with the moon goddess of the Eastern nations. She presided over a never-ending process of creation and destruction.

METALLURGY, CERAMIC AND TEXTILE ARTS IN CENTRAL AMERICA. Gold was obtained by working sand. Silver was extracted by the blast furnaces. Copper and bronze was com-

**mon.** There were skillful workers in inlaid beautiful vases and utensils; weapons were forged; head-gear, girdles were wrought out with needles; weaving and dyeing were common.

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**THE LIGNITE STATUES.** The area over which lignite architecture obtained prominence, and still obtains, corresponds to the vast wooded region which stretches from the Propontus and the Fuxine, and stretches across the peninsula in a northern direction, and reaches the heights of Taurus, and joins on Licia. In Persia, wooded columns held a prominent place, but changed to stone columns when the second Babylonian Empire came into power.

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**THE SKELETONS IN CROATIA.** The discovery of the skulls and skeletons in a cave in Croatia, Austria, has excited a good deal of attention among anthropologists. These skulls are said to resemble the Neanderthal and that of the Man of Spy, but are longer. There is a curious forward curvature of the spine, making it more like the monkey than the man, as the erect position is peculiar to man. The body was long and the legs short, and the arms long. One has deep set eyes, and immense teeth were set deep in the jaws. It is said that there were evidences of fire in the cave. Fraipant claims that these animals did not walk erect, and it is a question whether they had the power of speech.

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**FIRE WALKERS.** Prof. Langley of the Smithsonian Institution has had the opportunity of witnessing the Fire Walkers of Tahiti in their startling and pretentious ceremony, but has found that the stones were of porous lava and did not convey heat.

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**METALLIC IMPLEMENTS.** Rev. W. M. Beauchamp has prepared a seventh booklet on the Archæology of New York. This treats of the copper and iron relics. He thinks that the majority of the copper relics are comparatively modern, as there are many in the mounds. Copper is found in the mounds of Wisconsin, Iowa, Ohio, Georgia and other Southern States, but is rare among the Cliff-Dwellers.

## BOOK REVIEWS.

JAPANISCHE MYTHOLOGIE. NIHONGI. ZEITALTER DER GOTTER.  
Karl Florenz. Tokyo, 1901. 8° pp. 341; 19 plates; 2 maps.

Dr. Florenz is professor in the University of Tokyo and a competent Japanese scholar. He has already published that part of the *Nihongi* which deals with truly historical matter (of the seventh century), under the name *Nihongi oder Japanische Annalen*. In the work before us he presents the remainder of this important and ancient classic, the part which deals with the times of the gods. The two great sources of Japanese mythology, the foundation of the national religion—Shinto—are the *Kojiki* and the *Nihongi*. Both have recently been made the subject of profound study among Japanese and foreign students alike. Satow, Chamberlain, and Aston have written works of high importance and interest; it is criticism of their writings, however, to recognize, in the productions of Dr. Florenz, a scholarship and ability unsurpassed in this field. His qualities are admirably displayed in the volume before us, which is published as a supplement to the *Mittheilungen der Deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens*. Dr. Florenz gives a careful translation of the usual text; in footnotes he presents the varying ideas of commentators, both native and foreign, and briefly states the reasons for his own view. He has divided the text into convenient chapters and sections and has adopted a simple system of indicating variant passages and glosses. In his notes he presents a vast amount of material relative to ethnography, Shinto, and geography. He frequently gives etymological suggestions, though always with caution, as he warns us that the comparative philology of East Asia is still chiefly to be made. He strongly emphasizes the need of attention to the laws of phonetic change and replacement. The work is happily indexed, and the illustrations, from Japanese sources, are curious and represent well-known scenes from the life of the gods. In this connection we may refer to the gift, by Dr. Florenz to the Berlin Ethnographic Museum, of a collection of objects illustrating Shinto. Probably only the Buckley collection preserved at the University of Chicago and catalogued by your reviewer in 1892, can be compared with it, in extent and interest. It will be seen that this new study by Dr. Florenz, is a necessity for the serious student—even if he has mastered the writings of the three great English authorities, whom we have named.

(F. S.)

- THE LANGUAGES OF THE STATE OF OAXACA, MEXICO. (a) INVESTIGACIÓN SOBRE EL IDIOMA AMUZGO Oaxaca, 1901. Sq. 8° pp. 163.  
(b) BREVE NOTICIA DEL IDIOMA PAPABUCO DEL PUEBLO DE ELOTEPEC. Oaxaca, 1901. Sq. 8° pp. 20.  
(c) EL CUICATECO. Oaxaca, 1902. Sq. 8° pp. 119.

Among the states of Mexico, Oaxaca is preëminent in the number of native tribes still speaking their ancient languages. At least fifteen living tongues are to be found in the State. Fortunately there is one local student, who has had the interest, diligence, and time, necessary for their study. The Licenciado Francisco Belmar began publishing matter relating to these languages in 1890 and 1891, when he printed an original Zapotec cartilla and reprinted rare old studies of the Mixe and the Zapotec. Since that time he has published, at irregular intervals, a series of original studies of nine other Oaxacan languages. The last three of these now lie before us. Señor Belmar has pursued his investigations under great difficulties;



in printing them he has sometimes had the type set and the printing done in his own house. In the three numbers just received the Amuzgo, Pababuco and Cuicateco, languages but little known and of restricted geographical range, are dealt with. The volumes present a neat appearance and we are glad to see that the state government of Oaxaca has borne the expenses of their publication. We hope that this government assistance may be continued until Señor Belmar has completed his task and published original studies upon each and all of the indigenous languages of his native State. (F. S.)

LA FOLIE DES FOULES. DR. Nina-Rodrguez. 1901. Extract from *Annales Medico-psychologiques*. 8° pp. 56.

In this highly interesting brochure Dr. Nina-Rodrguez of Bahia, Brazil, examines certain nervous contagions which have occurred in that country. Preliminary to presenting the observations made upon these local manifestations, he summarizes the ideas of recent French and Italian writers upon collective insanity and nervous states; he studies the crowd under insane contagion and examines the relation of the unbalanced leader to his unbalanced mob. After this preliminary summary, he presents the observations upon five recent occurrences in Brazil, ranging from paranoia affecting but two members of a single family, to the dreadful nervous, religious outbreak at Pernambuco, which involved a veritable hecatomb of unfortunate, sacrificial victims. The author, in closing, states a number of tentative conclusions and tests some of the views already enunciated by writers upon this interesting subject. (F. S.)

ANALES DEL MUSEO NACIONAL DE BUENOS AIRES. Tomo VIII. (Ser. 2a, t. LV.) (Con retrato, 5 láminas y 2, 2 figuras en el texto). Buenos Aires. Imprenda de Juan A. Alsima, calle Mexico, 1422. 1902.

The National Museum of Buenos Aires is doing good work, as the names of Ambrosetti, of Ihering, and of Ameghino would indicate. There are few museums in the world that have accomplished as much in the same time. This report for 1902 contains a description of certain ceremonial vases, illustrated by several cuts, by Juan B. Ambrosetti; also a description of certain hotive hatchets of stone, by the same author. Both articles open up a line of study which has not been fully appreciated, though everyone knows that the religious sentiment had great influence over the art of the prehistoric people of America, and has left its mark on nearly all the relics in stone and pottery, as well as in the textile fabrics and the specimens of architecture.

DEPARTMENT OF THE INTERIOR. UNITED STATES GEOLOGICAL SURVEY. Preliminary Report on the Ketchikan Mining District, Alaska, with an Introductory Sketch of the Geology of Southeastern Alaska by Alfred Hulse Brooks. Washington: Government Printing Office. 1902.

Alaska is divisible into four geographic provinces. 1. The western most includes a mountainous belt which may be called "The Pacific Mountain System." 2. East of this is the Plateau Region. 3. A province formed by the extension of the Rocky Mountain System. 4. East and north of this is what is called the "Plains Region."

The Pacific Mountain System includes the Coast Range, the Saint Elias Range, the Aleutian Range and the Alaskan Range. Southeast Alaska is the best region in the world in which to study glaciers. John

Muir was the first to call attention to the magnificent scenery. The glaciers of the coast range are of the Alpine type. The mining district embraces an area of about 7,000 square miles in southeastern Alaska. During the Russian occupation of Alaska no attempt was made to investigate its mineral resources. Gold was discovered in 1861, but no attempts were made at placer mining until after the transfer of the territory to the United States in 1865. The sketch of the survey, by Alfred Hulse Brooks, is very interesting.

PROCEEDINGS OF THE CALIFORNIA ACADEMY OF SCIENCE. Third Series. Geology. Vol. II., No. 1. Cretaceous Deposits of the Pacific Coast by Frank M. Anderson. With 12 Plates. Issued December 1902. San Francisco. Published by the Academy, 1902.

The Cretaceous deposits of the Pacific coast lie within a narrow continental border, mainly to the west of the Great Basin, which extends from Mexico to Alaska and the Arctic Ocean in disconnected fragments; California, Southern Oregon, Puget Sound and British Columbia. The deposits in California were studied by Dr. Trask in 1856, Mr. Gabb in 1866, Prof. Whitney in 1887, by Becker in 1888, J. S. Diller in 1893, and D. Merriam in 1897. The exploration by Frank M. Anderson furnishes the last contribution to the subject, and gives a full account of the fossil specimens, of which the plates are good representations.

NEW FRANCE AND NEW ENGLAND. By John Fiske. Boston and New York: Houghton, Mifflin & Co. 1902. 378 pp.

"From Cartier to Champlain," "The Beginnings of Quebec," "The Lords of Arcadia," "Wilderness and Empire," "Witchcraft," and "The Great Awakening," are subjects which are treated in Mr. Fiske's concise and careful manner. Crown Point, Fort William Henry and Ticonderoga are localities which are graphically described; also Fort Frontenac, Duquesne and the Forts of Quebec.

A CONCISE DICTIONARY OF EGYPTIAN ARCHÆOLOGY. A Handbook for Students and Travellers. By M. Brodwick and A. Anderson Morton. New York: E. P. Dutton & Co. 1902. 190 pp., with 88 illustrations.

This little book will be useful to those who are making a specialty of Egyptology. We learn from it that there is only one bridge in Egypt, and that copper came from the peninsula of Sinai. The Labyrinth is described also Mastababs.

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THE DISTRIBUTION OF MOUNDS.

BY STEPHEN D. PEET.

The world is full of monuments. Some of them are made of earth; other of stone, and others of bronze. Each in their turn indicate a new age and the progress of civilization. The history of the past is made known by these mute witnesses. There is scarcely any land which has not its records kept by these monuments in one form or another, but the earliest of all is that contained in the mounds.

The first striking event in the history of any community, is the first birth or first death, and so it is with the history of the human race. We go back to the earliest record and find the story of the first pair, and soon after the story of the first death. It is conceded that the earliest monuments were placed over the bodies of some distinguished dead. So the earth mounds of every land may be regarded as mementos of tribes and peoples that have passed away. Nothing is more sacred to the human heart than the memory of the dead. It is a sentiment which is as strong among wild Indians as among civilized people.

The earth mound was to them a memento of the past. To us the dearest associations are those which unite the visible with the invisible, the past with the present. And so it has been with others. As generation after generation was gathered to its fathers, the growing mound would increase the sacredness of the spot.

It is thus that we arrive at a motive sufficient for the great pyramidal structures. Human nature, true to its original instincts, thus hallowed its inmost feelings by the great mound. Such is the reason for supposing the pyramids to precede every form of religious edifice. The highest thought of immortality is aided by these monuments of the departed. History and architecture agree in this: that the pyramids are the oldest monuments, but there are tumuli found everywhere in the habitable globe which are much older.

The universality of mounds throughout a large portion of the world, only shows that man everywhere possesses the same religious instincts and uses the same method for honor-

ing the divinities, and shows regard for ancestors in about the same way. It is by following the course of architectural development in the Old World that we find the law which prevailed in the New. The remote period in which the great number of monuments were erected, leads us to pay a regard to the monuments of our own land. It may be that if we better appreciated the feelings which exist in all hearts and homes, we would look upon the mounds that surround us with a greater sense of their sacredness. The record contained in them is not so important as that contained in the monuments of the East, yet the consecutiveness of architecture in both hemispheres, and the singular parallelism seen in both worlds, makes the study of mounds and monuments very important.

In every land we meet with tokens of respect for the dead. We cannot expect to find in the mounds of this country any such record as is contained in those mounds in which many of the ancient cities lie buried; but we may at least ascertain what kind of structures were erected in prehistoric times, and by this means gain a view of the beginnings of architecture even better than in the Old World. The same is true of the beginnings of art, for while certain tokens of the Stone Age have been discovered in the historic lands, yet if we are to learn about the art of the Stone Age we need to examine the relics which are hidden beneath the mounds of the Mississippi valley.

The work of mound exploration has fallen into discredit because of the motives which have ruled with many; yet there are lessons to be learned even here. It will be remembered that these silent mounds were the result of religious ceremonies, which followed one another through many centuries, and were practiced by many tribes. The many generations have left their record in them, which makes them like the leaves of a book which may well be compared to the "Book of the Dead."

Among the people situated as we suppose the early inhabitants of this country to have been, these contain the only records. The continuity of the same race in the same country, and uninfluenced by any foreign element, continued until the time of the Discovery. There may have been many tribes, but they were all aboriginal. What length of time was required for these successive manifestations we cannot say. We know there were many ages through which architecture struggled in the Old World, and we may expect to find traces of many generations in the New. From the pyramid to the temple, in Egypt, was a far cry which extended through 1,500 years, and it may be that the same length of time elapsed between the beginning and ending of the mound-building period.

The interval between the earliest grave in Egypt and the building of the pyramid at Ghizeh may have been very long, but it is unknown how long a time elapsed between the first ap-



pearance of man here on this continent and the beginning of the mound-building period.

There were various and succeeding phases of society in the Eastern World before history began to be written. In the Western World no history was really written until the advent of the white man; and yet there are many evidences that a rude civilization had prevailed here long before that time. It is from the careful study of archæology that we are to carry the records back, and learn about the changes and events which occurred.

These massive monuments are before us as the memorials of the past, and we are not to destroy them until we have found the record. The history of mound-building will, then, be appropriate here.

There is a description in Homer of the process of mound-building, which was common in his day, for it was over the



MOUND AT MARATHON, GREECE.

grave of Patroclus that a sacrifice or hecatomb of oxen was made, and that a mound was erected. Xenophon also has made a record of the manner in which those slain in battle were buried, so that we know that the habit of mound-building was common then and had probably survived from the pre-historic into the historic period. It is by this means that we have been able to identify and to know that the site of the battle of Marathon, which was one of the most memorable events in the history of Greece, is the monument of those who fell in that battle.

There is also a mound on the coast of Asia Minor, which is a monument of the Siege of Troy, described by Homer. Schliemann discovered it, and identified it as the one in which was buried the hero, Protesilaus, who led the warriors of Thessaly against Troy, and was the first Greek who jumped on shore. The tradition of antiquity attributed it to him. This tumulus and the gardens around are strewn with fragments of thick black pottery, which are very ancient, and similar to that

found in the first city at Troy. There are other mounds scattered over the globe, which are monuments of events of nearly equal importance, but are not so well known because no Homer or Schliemann has arisen to make known the event, or identify the mound with it.

The large majority of mounds and monuments of the East were erected as places where the remains of the deceased could be buried, and where the personal possessions, especially those which were the most treasured, could be deposited. It is very singular how wide-spread was this custom of depositing the treasures of the deceased along with the body. We speak of the habit of the North American Indian, of depositing the relics with the body of the dead, the most of which were made of stone or copper or shell, and have been preserved, so that through them we can learn about the art of the Stone Age. But the same custom prevailed among the nations of the East, long after the Stone Age had passed away, so that one of the means by which we may learn about the art and social condition which prevailed in the Bronze Age up to the beginning of the Iron Age, is to enter the tombs and draw from them the treasures which they contain.

This practice of burying treasures with the dead prevailed in Egypt as well as Greece. The view of immortality led the Egyptians to make the tomb in the shape of a house and to place a statue in the tomb, but to bury the body below the tomb, and treasures with the body. Even pyramids were built in this way. There was a chamber in the pyramid, but the body was below it. The mound-building habit of the Egyptians reached its highest point in the pyramids.

With the Babylonians the case was different. Many houses and palaces, temples, libraries, and statues have been found buried in the great mounds; no such burials as have been presented by the tomb of Mycenæ, nor such mummies, are numerous in Egypt.

The tombs are built in the form of houses; many of which were conical in shape, and resembled the early houses, rather than those which were occupied by kings; so that there is a double advantage in opening the tombs. We learn about the ancient architecture as well as the early art, and find a record which is as useful as if there had been a written account of the scenes and circumstance of the times. It was on this account that the explorations by Schliemann in Greece are so valuable. It was his acquaintance with the Greek language and his admiration for Homer that led him to dig into the great hill at Hissarlik, and as a result he was able to identify, not only the site of ancient Troy, but to discover the traces of sixteen cities which had arisen upon the spot and gone to ruin, making successive layers, by which the age of the cities could be identified. The relics which were discovered show the progress of civilization, as well as of art and architecture. It was also his

familiarity with classic writers that led him to undertake his expeditions at Tiryns, Mycenæ, and Athens, which resulted in such wonderful discoveries.

The tombs of the ancient kings contained treasures of great value; but a benefit came to the world from his discovery, which cannot be measured in dollars and cents, for the relics of art which were exhumed, have thrown light upon the period which has not ceased to astonish even the best of scholars. They have not only become familiar with the magnificence which prevailed in the palaces of the kings, but have learned much concerning the common things in use among the people. We may say then, that mound exploration in America has received a new dignity, and the relics which are exhumed from them have an additional value from the fact that they can be compared with the treasures taken from the tombs of the East, and so the different stages of progress may be learned.



No. 123.—Tomb of Protesilaus on the Thracian Chersonese opposite the Plain of Troy.

#### BURIAL MOUND OF PROTESILAUS, THESSALY.

Nor does the value of mound exploration cease with the knowledge of classic history, for the Bible itself has received a new light as a result of mound explorations.

There are very few burial mounds in the Holy Lands, and the relics of extreme antiquity are lacking; but there are mounds and monuments even there, which carry us back to the days of Abraham, or even earlier.

In fact, the Stone Age antedated the Bronze Age and the Iron Age in all parts of the world, and we have a much clearer idea as to the social conditions which prevailed in Egypt, Syria, Babylonia and other parts of the world, after studying the relics and remains of the prehistoric peoples buried in these mounds, than we would have without them.

They belonged to a race totally unlike those whose monuments are discovered in the East, yet the supposition is that they originated in the Old World, and represent the races which once existed there.



Great efforts are being made to learn about the relics of the Stone Age in the Old World, for from them we learn the beginnings of art and architecture, and even of religious symbols, and the efforts which have been so successful here in bringing out the peculiarities of that age, may be of great assistance to the archæologists elsewhere.

The scarcity of the relics of the Stone Age in Greece and Babylonia and Egypt seems to be lamented, yet enough have been discovered to show that that age did really exist in those lands. Perrot and Chipiez say :

When we attempted to draw up the balance sheet of the Grecian Stone Age, we are not beset with an embracing mass of material, such as is seen in Mexico, Scandinavia and other lands. The paucity of objects of this nature stand out all the more clearly from the contrasts. We cannot demand of this country megalithic monuments, menhirs, cromlechs, or dolmens, for the simple reason that none are found in Greece or on the coast of Asia Minor. The pile villages that were brought to light in Thessaly and Macedonia, have turned out to be quite modern, and have no connection whatever with the palafittes mentioned by Herodotus. In them, moreover, no objects dating back to antiquity have been discovered. There is little reason for seriously examining the stone or flint yard in Accadia or Orchomenus, or the kitchen middens which have been pointed out in Salamis. Still, on the other hand, researches are encouraged by the knowledge that towns that played so brilliant a part in history were often built on much older settlements, so that when sub-structures or foundations were laid bare, instead of the looked-for classical buildings, they frequently present remains of villages in which had lived the earliest inhabitants of the country. Of the different pieces representing the Stone Age, fragments of obsidian and flint cut to a point are numerous and widely distributed. Schliemann's excavations alone have yielded thousands. The largest crop comes from Hissarlik, but Mycenæ and Tiryns furnish fine specimens also. Pieces of obsidian fall under two different heads: slender cones fitted to wood, or bone handled, to be used as a javelin; or thin triangular blades intended to go through the air and hit the mark at a distance (arrow-heads). Long fine blades, whether as knives or saws are not common here.

There is yet another class of instruments which a wide spread superstition has done much to popularize. The Greeks designated them "Astral Stones." The French and Turks call them "Thunder Stones." We allude to polished stone axes, which are so largely represented in our collections. They represent the *first efforts of a primitive people to emerge from barbarism*, a status which was not so apparent in the several populated centres, as in the clans that were scattered about. Still the employment of stone implements did not cease when metal tubes made their first appearance, for stone was discarded slowly and by degrees. The finest specimens of stone relics have come from Troy, Tiryns, and Mycenæ, towns where metal was applied to all the usages of life.

The passage from a semi-savage state to a settled condition among the Greeks, was effected in their countless migrations to and fro, finally establishing themselves in positions in which they became the Greek nation. Their efforts are visible in scenes far apart from one another, and yet not too distant to preclude their entering into relations of intimacy with each other, and to have bestowed upon their handiwork a general family resemblance. The Hellenic tribes were separated by mountain or sea from one another, and did not owe allegiance to a supreme head. Each obeyed its own chief and lived its own individual and independent life, but the State that had Mycenæ for its capital, appears to have been the most influential among all. It constituted continental Greece, during the four or five centuries that preceded the Doric invasion.

The discoveries made during the last thirty years have disclosed to us at Greece totally forgotten, and older than Homeric Greece, but none



created so deep an impression as those in the Mycenæan metropolis. These far better than any other, show us the means of defining the civilization which was the earliest.

The thought expressed above in reference to the isolated tribes having developed in the course of time into a nation, is important, for it shows that it always takes time for any people to grow into the condition of a nation; and, unless the tribes are surrounded by physical barriers, and protected from incursions, they may never reach this position. This point is important in connection with the Mound-Builder's history.

Schliemann thought he recognized seven periods at Troy, but these were reduced to four superimposed cities. Resting on the rock itself, was the first settlement. In the second period the gate was furnished with a lintel and wooden jambs, and opened into a narrow sloping corridor. Percy Gardner says:

It is supposed by many archæologists that the graves which were dug in the rocks, just within the lion's gate at Mycenæ, were earlier or older than the beehive tombs, the rich spoil of which dazzled Europe a few years ago. It is not unusual to recognize in the graves of prehistoric Greece, two periods, the older marked by rock cut tombs, and the later by beehive tombs.

This would indicate that tomb building began in the Stone Age, though this has been obscured by the accumulations of more recent times. The same fact is true of the Holy Land. There was a mound situated in the south of Palestine, which was supposed to mark the site of the ancient Lachish, but it was a silent heap of earth. No one had undertaken to draw out its secrets until Mr. F. J. Bliss, the son of a missionary, was induced by Prof Petrie to enter into the work of exploration. He found that it contained the records of many ages, and it is now called the "Mound of Many Cities." Its history does not go back to the Stone Age, but leads us to an acquaintance with a condition of the country while the Egyptians were in power, and when a correspondence was carried on between Ramses, the great king of Egypt, and an officer who was stationed at this very city; and a series of letters were discovered, both in Egypt and in Syria, which carries back the history of writing to a much earlier period than had before been known.

The exploration by Mr. Arthur J. Evans has also shown that prehistoric civilization appeared not only in Greece and Asia Minor and Egypt, but extended from Cyprus and Palestine to Sicily and Southern Italy and the coasts of Spain. The colonial and industrial enterprises of the Phœnicians have left their mark throughout the Mediterranean Basin. In all these excavations and researches, the land to which ancient tradition pointed as the cradle of Greek civilization, had been left out of account. Crete was the central island, a half-way house between three continents. Prof. Flinders J. Petrie says:

Here in his royal city, Knossos, Minos ruled and founded the first sea empire of Greece, extending his dominion far over the Ægean isles and coastlands. It was as the first law-giver of Greece that he achieved his greatest renown. He was the Cretan Moses, who every nine years repaired to the cave of Zeus and received from the god of the mountain the laws for his people. Like Abraham, he is described as the friend of the gods. His symbol was the double axe; his animal figure totem was the bull. The great cave of Mount Ida, whose inmost shrine was adorned with natural pillars of gleaming stalactite, leads deep down to the waters of an unobscured pool. On the conical height immediately above the site and surrounded by a cyclopean enclosure, his tomb was pointed out.

The palace had a long antecedent history, and there are frequent traces of its remodelling. Its earliest elements may go back a thousand years before its final overthrow, approximately to 2,000 B. C., but below the foundations of the later building and covering the whole hill, are the remains of a primitive settlement of still greater antiquity, belonging to the Stone Age. In parts this Neolithic deposit was over 24 feet thick, and everywhere full of stone axes, knives of volcanic glass, dark-polished and incised pottery, and primitive images, such as those found by Schliemann in the lowest strata of Troy.

The wonderful construction of the tombs which have been built in Greece, shows how sacred was the memory of the dead, and how valuable the knowledge of the Stone Age is, and how numerous were the survivals of that age in the specimens of art and architecture of the East, for the very tombs in which the royal treasures were buried, bore the shape of the conical huts which had prevailed in that age. The same is true in Egypt, Babylonia and other cities of the East. It is well known that the mastabah in which the mummies of royal persons were preserved, represented the huts which had prevailed in the Stone Age, and as a proof of it, the piece of pottery which represents a primeval house may be cited. The same is true of Rome, for here the beginning was a hut, for a piece of pottery representing the hut in which the shepherd gave shelter to the two brothers, Romulus and Remus, has been found. It is a hut-urn which resembles that belonging to the Lake-Dwellers of Switzerland during the Stone Age.

The evidences of the Stone Age in Babylonia are lacking, but the explorers are approaching that age. The mounds in the plaza of Babylonia remind us of the Stone Age.

It was in a mound at Nippur that a party of American explorers began their work, and which has not ceased to throw light upon the records of the past. Through their perseverance the date of history has been carried back at least 5,000 years, and it has been discovered that writing was known 2,500 years before the days of Abraham.

Great libraries have been disclosed filled with tablets written in the cuneiform language, from which we have learned about kings and empires which had remained unknown for thousands of years. The Bible student who has not become familiar with the result of these explorations, which have continued up to the present time, is certainly deficient in many things, for these have given new settings for all the characters whose portraits are portrayed, and they assume far more importance than they

ever did before. It was not in the infancy of the world that the Patriarchs lived, nor was it among a rude and barbarous people that the migrations took place, for there have been found beneath the great heaps of earth that stand by the Euphrates and Tigris, the remains of palaces which astonish us in their magnificence and size.

Still, the fact that the stone knife was used in the rite of circumcision, and even human sacrifices had survived in Abraham's day, proves that the influence of the Stone Age was felt even by the Patriarchs as well as by the kings of Moab.

The writing dates back to 5000 B. C. By means of inscriptions we have been able to trace history back to this time, but the first construction of which we have evidence, is that of Ur Gur, about 2800 B. C. It was one of the most renowned and revered seats throughout the whole Babylonian and Assyrian period. Dr. Peters says:

There were mounds which covered the site of an ancient city called Sirpurla, a tributary of Ur. An immense deposit of inscribed clay tablets has been found here. Several low mounds at Tello have also yielded a large number of relics which are important. These differ from those of the Stone Age, in that they show that writing was common, and architecture was in a fair state of advancement. The court of columns discovered at Nippur, also shows that the architecture had passed beyond the Stone Age. Door sockets were also discovered here, and the oldest temple in the world, the arch made out of crude bricks, designed to protect or cover a drain; also pavements and buttresses, causeways, gateways, towers, a ziggurat of several stages, and brick walls of three different periods, pottery of various kinds, clay tablets, brick stamps, tablets that show a series of astrological records, shrines, a mysterious dwelling of the unseen god, emblem of the tabernacle above the clouds, a Babylonian palace of great extent and some architectural pretensions.

Ur was not only the seat of the first temple, but was a great city of the first political importance, dominating Southern Babylonia about 4000 B. C. Eridu, which was at least as old as Ur, is represented by the ruined mounds of Nowawis on the edge of the Arabian Plateau. South of Eridu may be mentioned but one city—Sippara, the ship city, where the records were buried during the flood. Both Ur and Eridu seem to have been at one time located near the sea, but they are at the present time 120 miles from it. From the later deposit we find that the cities would have stood on the shores of the sea about 7,000 B. C., but back of this we must conclude there was the Stone Age, the date of whose beginning is unknown.

All of these discoveries convince us that civilization had existed here many thousands of years before history began to be written elsewhere, showing that in this particular locality there was a progress which was equal to the Bronze Age and, perhaps, the Iron Age, as it first began to be known in other parts of the world, though the use of iron had not been discovered.

The mounds of Babylonia were, as everybody knows, very different from those of America, for they contained the "ruins of lost empires," and were formed by the gradual accumulations of ruins, and were not made intentionally to cover up the remains of those who had died, or to preserve the relics of those who have lived; but the result is about the same.

The distribution of the mounds and monuments brings us into other parts of the world. It is a remarkable fact that in China we find that the forms of the tents which constituted the

homes of the Chinese while they were in their nomadic state, are still preserved in the shapes of their temples and towers. This has been spoken of by many travellers and scholars. It is even maintained that the method of building the houses is, at the present day, the same as that which prevailed when tents were the only houses.

There are mounds in China which reveal to us the earliest form of civilization which prevailed there. There are, to be sure, other signs which show that the Chinese came up from the Stone Age, and that they resembled the wandering tribes which formerly existed on this continent, and dwelt in tents or huts as they did.

There are mounds in China which remind us of those on our own continent. These mounds preserve the remains of the dead, and are very sacred because of the love of ancestors which is so strong. Confucius, the great philosopher and founder of the Chinese Empire, was buried in a mound, which still stands.

It is probable that mound-building in China began when the people lived in tents, and that the mound in which Confucius was buried was a survival of the custom which had prevailed for many thousands of years, at least there are many mounds in Mongolia which resemble those which are common in America. This does not prove that the Mound-Builders, so called, came from China, though they may have sprung from the Mongolian race; yet it renders it probable that the races of America were descendants from the Mongolians.

There are also mounds in Russia. They are called "Kurgans," but they are filled with the relics of the Stone Age. They show that the mound-building custom prevailed not only among the Slavonic tribes, but also among the Manchurians. Arctic regions seem to have been possessed by a Mongolian race. Dr. Pickering includes the American Indians among the Mongolians. By most writers, however, the American Indians are held to be a distinct race, which from recent discoveries is supposed to have dwelt on either side of Behring Sea, and is called the "Behring Race"; while the Mongolians are restricted to the Tartar tribes, and the Mantchoos, Koreans, Chinese, Thibetans, Siamese, Finns, Laplanders, and Samoyedes; all these tribes nations are supposed once to have been nomads, and many of them were mound-builders.

The Japanese were accustomed to erect mounds over their dead, and these still remain as the monuments of the past, and are very instructive in reference to the history of that people. It appears that there were three different periods in Japan, the first of which was marked by cave-dwelling savages, who have been called "earth-spiders" or "earth-hiders." Ancient records contain many allusion to them. Mr. Romyn Hitchcock has compared them to the pit-dwellers, who were older than the Ainus, as the pottery found in the Pit-dwellings was



not made by the Japanese. It is older even than the tradition of the Japanese, and may be older than the Ainu occupancy. These "earth-dwellers" or "earth-spiders" were migratory, and may have been the same people who left the kitchen-middens in Japan, or they may have belonged to the so-called "ground race," which has been identified as distinct from the Mongolians, but similar to a race which occupied the north-west coast of America, who here built their houses over the excavations in the earth, and covered them with a pile of sods, making them resemble earth-mounds.

Mr. W. H. Gowland, of the Imperial Mint at Osaka, has spent several years in the study of the Japanese mounds. He has divided the burial into three or four classes: First, in under-



BURIAL MOUNDS IN CHINA.

ground burrows; second, simple mounds of earth; third, mounds with rock chambers, or dolmens; fourth, double mounds, or imperial tumuli. The common mounds, or circular heaps, are frequently found among cultivated fields and covered with trees. Those which contained rock chambers are usually built of rough unhewn stones, some of them of immense size. Long entrance passages are seen, through which one may walk upright for thirty or forty feet or more, sometimes lead to the chambers, in which there may or may not be one, rarely two, stone coffins.

When the covering of earth is removed from the burial chambers, it is found that they open through the passages, usually to the south; a fact which conveys the idea that the tomb was built in the form of a house, and that the houses especially those of the early inhabitants, opened to the south

The introduction of stone coffins occurred, according to Von Siebold, as early as 85 B. C., and continued until a late date. One stone coffin seems to be in the shape of a house. The upper part is in the form of a sloping roof, of the mansard style.

The mounds which were the imperial burial places, are interesting because of their history. The plate represents a double mound at Osaka. The length is 485 feet along the top, the width is 78 feet. In the year 646, the size of the tombs which persons of different ranks might build, was specifically stated. A prince might be buried in a vault 9 feet long, 5 feet wide, covered with a mound 75 feet square and 40 feet high. A common functionary could have a mound only 56 feet square and 22 feet high.

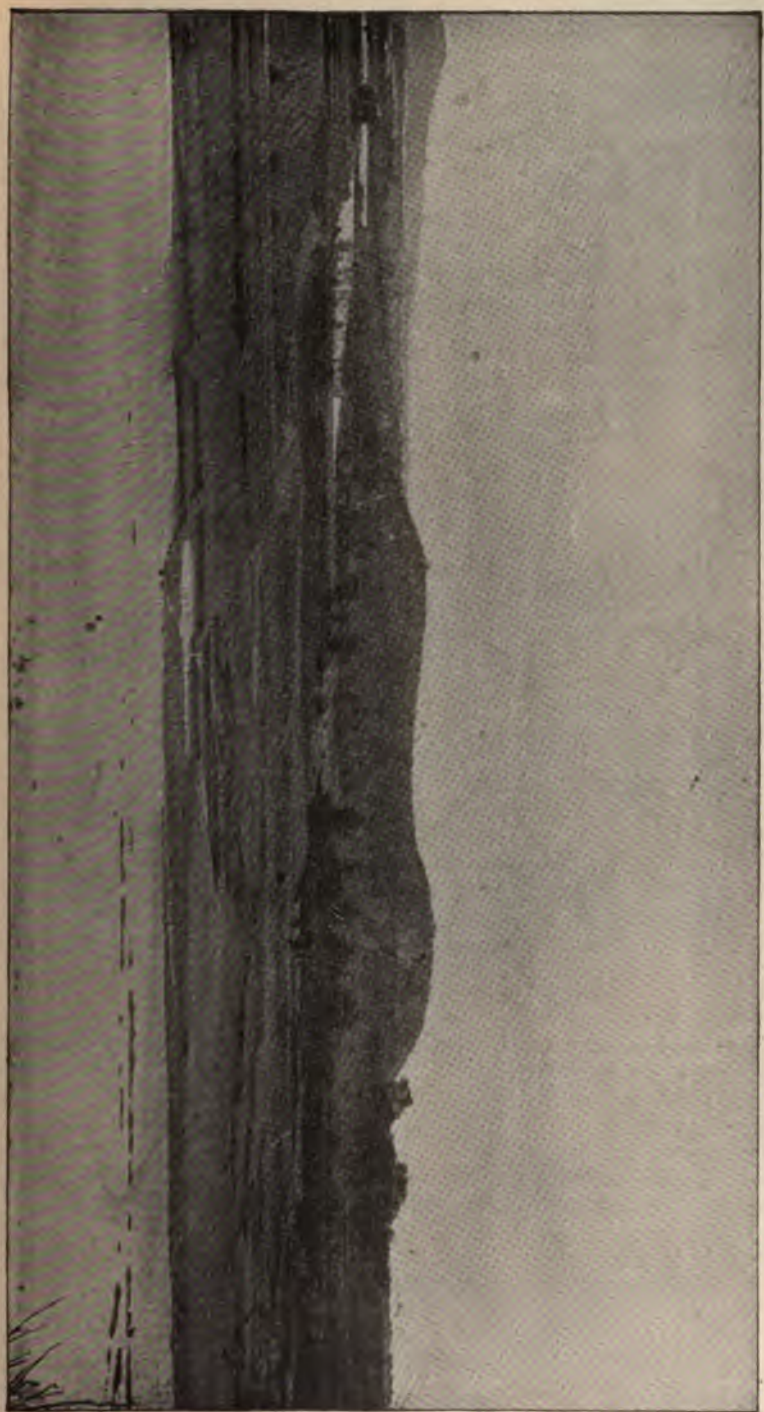
The custom of erecting a terraced mound began about the seventh century. These mounds are built up in three terraces. On the top of each was a fence formed of terra cotta pipes about two feet high, connected by wooden poles, which pass through holes about half way from the base. The cylinders were introduced to prevent washing down of the terraces. They were in use till the year 940 A. D., at which time clay coffins became common, which were afterwards changed to stone coffins.

The mounds have yielded a great variety of articles which were buried with the dead, such as iron arrow-heads, iron rings covered with bronze, silver swords, chains, glass beads, mirrors, and other relics. It was an ancient custom among the Japanese to bury the retainers and members of the family of a prince around his grave, a custom which was introduced from China. In the time of an Emperor of Japan, in 30 B. C., his brother died, and they buried all who had been in his immediate service, around his grave alive; but for many days they wept and cried aloud. The Emperor then said: "It is not good to bury living men standing at the sepulchre of a prince," and he proposed making clay figures of men and horses as substitutes.

Mounds are very common in Europe, but are found mainly in the northern parts, along the coast of Brittany, in various parts of Great Britain, and in Denmark and Sweden. These exhibit to us the customs which prevailed in prehistoric times. We find from them that there was a Stone Age in Europe as well as in America, but it gave place to the Bronze Age, which was brought in by immigrants from the Old World, from Eastern Asia, and from the provinces about the Mediterranean. The mounds of Europe exhibit not only the change which occurred when the Bronze Age was introduced, but they show also the different stages of progress which appeared in the Stone Age.

The people who dwelt in Brittany, in Great Britain, in Denmark, in Norway and Sweden were also reached by immigrants from the south of Europe, and the Stone Age in all those





DOUBLE IMPERIAL BURIAL MOUND NEAR NARA-KONABA, JAPAN.

countries gave place to the Bronze Age. Still, there was a survival of the relics and structures of prehistoric times even into historic times. The standing stones of Carnac in France, are near ancient mounds, underneath which are dolmens. There are barrows in Denmark which contain funeral chambers. These were designed mainly to preserve the bodies of the dead.

The progressive steps appear to be as follows: 1. To cover the body with earth and heap stones over the top, to prevent its being devoured by wild beasts. 2. To enclose the body within slabs of stone. 3. To set up over the body a pillar of unhewn stone, or a table of rock on two or more uprights. 4. To build a stone chamber in the shape of a house and cover the body with this. 5. To make the mound in the shape of a boat, to represent the sea-faring habits of the people. 6. To



BURIAL MOUND OF A NORSE SEA KING.

bury the boat with its equipments, with the body of the commander or seafarer in the boat. 7. To make the house itself into a tomb, and cover the tomb with a great mound; the possessions or furnishings of the house being buried with the owner.

By this means we learn the different habits and employments of the people, as well as the different stages through which they passed.

It is worthy of notice that in Scandanavia mounds have been discovered that belong to the Iron Age, some of which were the burial places of the Norse Sea Kings.

One such mound was found in the parish of Tune over a century ago. It was (1865) about 13 feet high with a circumference of from 450 to 550 feet. In the mound was a vessel



which stood on a level with the surrounding surface. Its position relative to the sea suggested that it was ready to be launched upon the element which had been its home, and was still under the command of its master. The articles found near the vessel showed that it was a ship tomb which belonged to the early Iron Age. The ship was carefully drawn out of the river to a place which could be seen at a great distance, and commanded a fine view of the country, as well as the sea. After the space under the ship had been filled with earth, the body of the deceased was placed in the stern where, as captain he had sat when alive. The beads and pieces of cloth indicate that the body was buried with the clothes on. By its side a horse and saddle and harness and snow skates were laid. Thus he had ship, horse saddle, and snow skates with him in the sepulchral tomb, so that he might chose whether he would ride or drive to Valhalla.

Mounds have been discovered on the Northwest Coast, in



BURIAL MOUND OF AN ANCIENT BRITON.

California, and various localities on the western part of the continent, which greatly resemble those found in China, giving the idea that the custom may have been introduced from that direction. No other line has been traced along the Atlantic Coast further north than the St. Lawrence River, though the mounds of the Mississippi Valley greatly resemble those found in Great Britain, as can be seen from examining the cut which represents a burial mound in the Parish of Herefordshire, England.

Now, this review of the mounds and their distribution throughout the Old World is not intended to furnish a clue to the origin or age of the Mound-Builders of the New World; still, there are some useful hints which are worth considering before the subject is closed:

1. It has been shown that the mounds of many cities are full of layers which have been caused by the destruction of different cities, and this conveys the idea that the stratified mounds of this country furnish the evidence of greater age than some have been inclined to grant to them.

There is, to be sure, a great difference between them, for in the mounds of Asia we count by thousands of years, while in this country we count by hundreds; yet if the beginning of the civilization and the historic period dates back to 10,000 years, this method of computing time would bring the Mound-Building Age back at least a thousand years, and furnish a hint of much greater antiquity.

2. The fact that many of the burial mounds of the Old World were erected as monuments to the dead, proves the high regard for the departed, and reflects honor upon the Mound-Builders of this country, for it makes it evident that they were governed by the same sentiment, and took pains to place their best treasures alongside the bodies which were buried beneath the silent heaps.

3. The fact that the mounds of Europe and Asia were built by races who were widely scattered, and whose history and race connection are involved in great obscurity, makes it very difficult to identify the Mound-Builders of this country with any particular race, though it opens a wide field which we may study in our effort to learn about the races who first peopled the continent.

4. The fact that the earth mounds both in Europe and in Asia preceded the mounds which contained stone cists and chambers, and belonged to an earlier stage of progress, all the Mound-Builders of this country with the earlier or, at least, a ruder people, rather than with the later and more civilized. The peopling of America is a problem which has not been solved, and until it has been, we cannot expect to decide about the race connection and history, or wanderings of the Mound-Builders; yet the recent discovery of the new race called the "Behring Race," may encourage our investigation.

5. The valley of the Mississippi is, however, the great home of the mound builders, and the stage of culture which was reached by them was that of the Stone Age. It matters not, then, what their origin was, for this valley is the place where their culture and social condition are to be studied, and where one phase of the Stone Age begins to be learned.

## THE STONE SPUD.

BY CHARLES E. BROWN.

[Reprinted from The Wisconsin Archæologist.]

The class, or more properly, classes of stone implement of which a consideration is attempted in the following pages, have been variously referred to in our archæological literature as spuds, hoe, spade and paddle-shaped implements and spade ceremonials and by other names equally indefinite and undesirable and the only explanation which can be offered for the present title is, that though not entirely satisfactory, it has nevertheless the advantage of being the one by which these varied, peculiar and interesting objects are now most familiarly known to the archæologists and collectors of our own state and of the country at large.

It is apparent the term "spud" as at present employed, is being used to define and include with its scope at least two classes of stone implements, which though they resemble each other in a general way, were, if we may judge by the difference in condition, workmanship, and general adaptability, intended for and undoubtedly served quite distinct purposes.

Save that presented by Fovke which embraces only such forms as are represented in the United States National Museum and does not include the Western form, no regular classification of these implements appears to have been attempted. In a like manner, nearly all of the published descriptions of various authors relate only to Southern and Southeastern forms, and but little or no effort appears to have been made to assemble the data or compare them with others.

Such being the case, a re-classification or re-consideration of all of the known types, is both timely and necessary.

In the following convenient classification which is based upon a rather exhaustive study of the available specimens and literature, the writer has attempted to explain to his brother students what are the differences both in form and probable mode of application of the several classes of these implements. This he has supplemented with extracts from the published descriptions, notes, suggestions and theories advanced by leading archæologists, and with such additional data as he has himself been able to collect.

Those who have undertaken similar studies will appreciate the difficulties with which he has had to contend. It is therefore unnecessary to recall them here. The rather broad divisions proposed may hardly be found to include all of the known forms, yet the classification is probably as good as any that can be devised in the present and as yet limited state of our knowledge. The author desires to acknowledge his indebted-



ness to Dr. J. F. Snyder, Mr. Harlan I. Smith, Prof. T. H. Lewis, Prof. W. K. Moorehead, Hon. J. V. Brower, Rev. James Savage, Rev. E. C. Mitchell, Prof. W. O. Emery and others for suggestions and data received, and to his brother students in various parts of the state from their collections.

#### CLASSIFICATION.

In the first of these classes may be included implements answering the following description :

CLASS A.—Blade broad of a semi-circular, semi-elliptical or somewhat hexagonal or triangular shape, flat or slightly convex, thickest near the handle and ground down to a dull rounded or fairly thin edge in front; shoulders square or sloping, in some cases rounded or barbed; handle generally long, tapering to a blunt point and usually circular or elliptical in section. Some examples have the edge of the blade near the shoulder ornamented with incisions or deep notches, and others also have incisions at the extremity of the handle. These implements are as a class graceful and beautiful objects and represent a high type of aboriginal stone art. They are usually wrought of hard primitive rock, and are generally highly polished. Nearly all are of large size, the largest known example measuring  $22\frac{3}{4}$  inches in length. Of their distribution Clarence B. Moore says: "Unlike so many of our aboriginal relics, this implement is of a type unknown in Europe. It is comparatively rare, though of wide distribution in the United States."

As the greater number of the known examples have been obtained in the Southern and Southeastern United States, that is generally considered to be the natural habitat of this class of stone artifacts. Specimens have been procured in districts as far north as Canada, but there is every reason to believe that these have been brought from some distant Southern or Southeastern locality in the course of aboriginal trade or war relations. It is this class of spade or paddle-shaped spud which we find most frequently described and figured in our archæological literature, and which in their endeavors to understand its precise office has cost so much trouble to our leading archæologists. Some idea of the several theories and suggestions thus advanced may be gleaned from the following extracts:

Dr. Chas. Rau\* in a chapter devoted to a consideration of "Scraper and Spade-like Implements," figures one and describes another of these implements. He speaks of their resemblance to diminutive spades, but does not assert that they were so employed. One of these (Fig. A) in the collection of Dr. Joseph Jones, now in the University of Louisiana at New Orleans, was taken from a grave mound at Old Town, Tennes-

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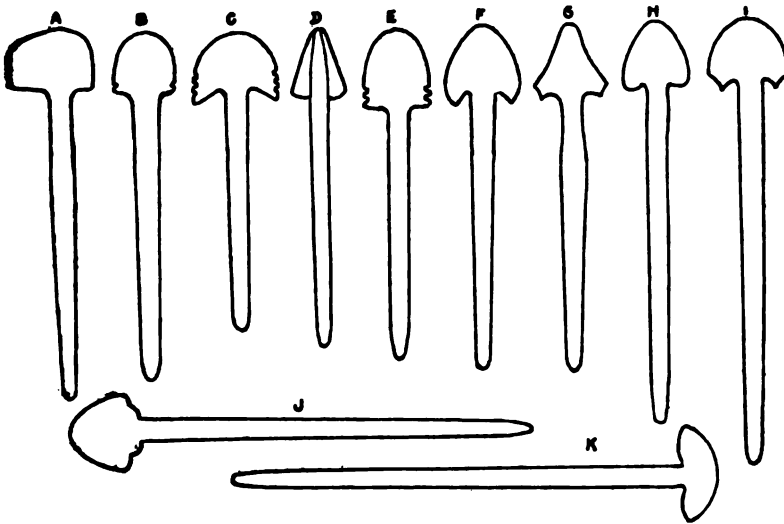
\* Archo. Coll. of U. S. National Museum



sec. It is made of greenstone and is  $17\frac{1}{2}$  inches in length. The other specimen is from South Carolina.

Col. C. C. Jones\* also describes and figures the Jones spud and adds: "We suppose this to have been an agricultural tool."

Gerard Fowke† describes and figures a specimen (Fig. B) fashioned of chloritic slate, from Prairie County, Arkansas. His remarks are intended to apply to both this and the perforated class of spuds. He says: "They are, usually, of a comparatively soft material, carefully worked and polished, and bear no marks of rough usage. On the other hand, they are too large for ornament. Perhaps their office may have been in some ceremony or game." He states that old residents of the Shenandoah Valley claimed that the last century Indians



of that locality used implements of similar pattern for removing the bark from trees.

General Gates P. Thurston‡ figures three of these implements, including a very handsome specimen in his own collection which was found in the stone grave settlement near Nashville, Tennessee. He says of them: "As no other more practical use has been suggested as to them, we call them ceremonial spades or maces." He also describes two others, "one  $15\frac{3}{4}$  inches long, and the other a delicate little type  $5\frac{1}{2}$  inches in length," and concludes his description with the following statement: "These implements are too dull for cutting purposes, and must have been too valuable for use as ordinary agricultural or mechanical tools."

\*Antiquities of the Southern Indians.

†Stone Art. 13th Ann. Rept. Bureau of Ethnology.

‡Antiquities of Tennessee.

Clarence B. Moore\* figures several fine specimens in the magnificent reports of his explorations. One of these (Fig. C), 14 inches in length, is made of sassurite and was taken from the Shields mound in Duval County, Florida. Another of polished claystone and 11 inches in length was procured from Mt. Royal (mound) in Putnam County, Florida. The same author credits Thomas Wilson, Esq., for a report of two of these implements, one of blue trap rock, highly polished, found near Columbia, South Carolina, and the other from Kentucky.

He quotes Dr. Joseph Jones, who says: "Several conjectures have been formed as to the use of these singular implements. Some have supposed them to have been used in agriculture, the flat head being employed as a spade and the round handle for making small holes in the earth for the deposit of Indian corn, others believe that they were used to strip the bark from trees; others again, that they were used in dressing hides, in excavating caves, or in felling trees after the wood has been charred by fire. It is possible that they may have been used for all these purposes and also as war-like weapons, since it would be easy to cleave or fracture the human skull with a single blow from one of these stone implements.

Mr. Moore concludes his remarks as follows: "Mr. Thurston reports a number of these implements from various parts of Tennessee, and rightly, we think, classes them as ceremonial. We consider them of too infrequent occurrence to suggest their employment for any practical use. We have been able to learn of none showing breakage or signs of use, and some are too small in size to render them useful as weapons. Moreover the tally marks on certain specimens connect them with the ceremonial class."

Marquis de Nadaillac† describes and figures a fine specimen of serpentine taken from a mound near the Big Harpeth River, Tennessee, and alludes to the finding of similar implements in the Cumberland Valley and South Carolina.

Dr. Warren K. Moorehead‡ figures a specimen (Fig. D) from Waterloo County, Ontario. It is remarkable for the shape of its blade, which is somewhat triangular. He mentions others, one in the Leslie collection at Chillicothe, Ohio, and another taken from a Scioto Valley mound by Squier and Davis.

In the A. E. Douglas collection in the American Museum of Natural History in New York there is a handsome specimen (M 44) of this class (Fig. E.), which is made of dark green slate and comes from Kentucky. It is 15¾ inches in length.

In the Terry collection in the same institution (T 587) there is a smaller specimen of compact slate 8¾ inches in length. It comes from the French Broad River near Dendridge, East Tennessee.

\* Certain Sand Mounds of Duval Co., Florida.

† Prehistoric America.

‡ Prehistoric Implements.

Mr. W. H. Ellsworth informs me of a fine specimen which was found near St. Augustine, Florida. It was purchased by Mr. A. E. Douglas. It is now with his collection.

Prof. W. O. Emery calls my attention to an Indiana specimen now in the possession of a collector residing near Crawfordsville. He says: "I believe them to be 'ceremonial' in nature, as were the large flint maces of Tennessee, Southern Indiana and Illinois."

Rev. James Savage of Detroit is the possessor of a specimen which was found near the Ohio-Michigan state line. It is made of slate. The blade, which resembles the half of an imperfect circle, has square shoulders. The cutting edge is sharp and shows much use. The handle has been broken off three inches below the blade.

Prof. T. H. Lewis of St. Paul, the well-known archæologist, has kindly sent me from his notes, sketches of a number of remarkably fine specimens of this class. Several of these are of a larger size than any which have been previously described. None of them are in public institutions. I have endeavored to figure them as accurately as possible.

Figure F comes from Grant County, Wisconsin, near the mouth of the Wisconsin River. It is 16 inches in length, and measures  $3\frac{1}{2}$  inches across the blade. A specimen very similar in pattern and 18 inches in length was found in Greeup County, Kentucky, nearly opposite Portsmouth, Ohio.

Figure G was found in the same locality as that just described. Length  $16\frac{1}{2}$  inches. Extreme width of blade 4 inches.

Figure H comes from near Cassville, Grant County, Wisconsin. Length, 19 inches. Extreme width of blade, 3 inches. A similar specimen 17 inches in length was found at La Crescent, Minnesota.

Figure I is from La Crescent, Minnesota. Length, 22 inches. Extreme width of blade, 4 inches.

Figure J, of micaceous slate comes from Oconomowoc, Waukesha County, Wisconsin. Length,  $22\frac{1}{4}$  inches. Extreme width of blade,  $3\frac{3}{4}$  inches.

Figure K comes from La Crescent, Minnesota. It is  $22\frac{3}{4}$  inches in length. Extreme width of blade,  $4\frac{1}{4}$  inches. It is 2 inches in thickness at the handle.

Elsewhere in this article will be found descriptions of other Wisconsin specimens of this class.

In closing this chapter the author desires to present the following conclusions and remarks which, though at variance with much that has been written concerning the purpose of this class of implements, are, he believes, worthy of consideration.

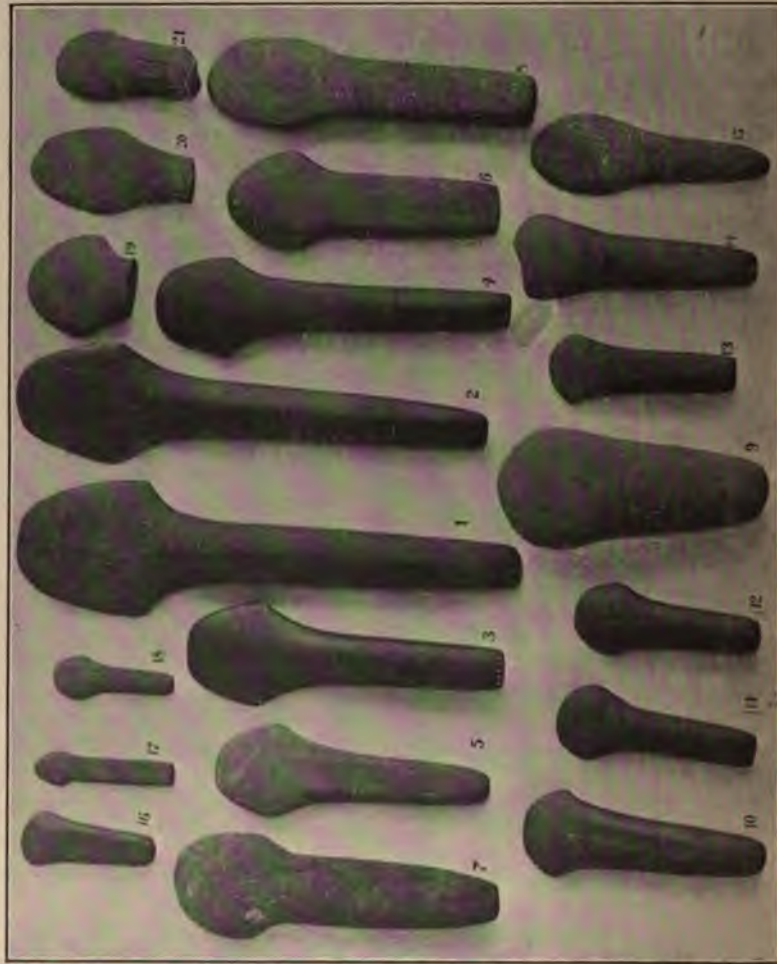
He is convinced that further researches in the field and an examination of the thousands of public and private collections of our country will show that these implements are of more frequent occurrence than we entertain any idea of at present. The very considerable amount of additional data which he has



been able to collect in his own and adjoining states would indicate as much

Contrary to what has been supposed some broken and mutilated specimens have been found.

Such specimens as have come to his notice and which he has been able to examine were generally so substantially



STONE SPUDS IN WISCONSIN COLLECTIONS—CLASSES A AND B.

fashioned and their blades so edged, as to suggest their employment for a practical purpose, though possibly not for all or any of those which have been suggested.

The presence of notches or incisions upon the blades and handles of some examples does not imply a relationship with objects of the so-called "ceremonial class" any more than do the flutings upon the polls and blades of a fairly numerous



**C**lass of Wisconsin grooved stone axes, which, notwithstanding their often artistic ornamentation, are of equal value for service and present the same evidence of hard usage that other stone axes have received.

The following extract from a communication received from Dr. J. F. Snyder, the well-known authority, is to the point. He says: "In the study of prehistoric American Indians I am inclined to think our natural propensity to magnify the mysterious and incomprehensible leads us often to ascribe religious or ceremonial motives to commonplace mechanical objects.

"In our ignorance of the early Indians' manner of pursuing the arts we know he practiced, any opinion of the use he made of this 'spade-like' stone must necessarily be little more than mere conjecture. But the hypothesis that it was a tool, employed perhaps in the ceramic industry, appears to me much more plausible than the vague and unsupported "ceremonial"

**CLASS B.**—Blade generally short, crescent-shaped or oval, convex or flat, reduced to a sharp cutting edge, shoulder when present also partially edged; handle generally of short or medium size, of nearly uniform width, circular, elliptical, less frequently square or somewhat rectangular in section.

Diorite, diabase and granite appear to have been most employed in the making of these implements. Specimens made of slate, sandstone and other materials are known.

They are usually quite smooth and polished. The sides of the handle are frequently pecked or left unpolished, as if to afford a better grip for the hand. The notches and incisions which characterize many specimens of the former class are absent in this. There is a well marked tendency in some of the smaller types toward celt forms.

The blades of a majority of these implements exhibit nicks and fractures and other unmistakable signs of use. Broken specimens are common and there can be no doubt of their having been employed by the aborigines for one or more useful purposes.

Dr. J. F. Snyder, who is well acquainted with these implements, says of them: "These indigenious specimens were evidently tools in common use. It is readily to be seen that they were serviceable appliances for stripping the bark from trees, for skinning large animals, for dressing hides and a variety of domestic purposes."

Hon. J. V. Brower of St. Paul, who has spent fifty years in studying the habits and customs of the Northwestern Indian tribes at their camping grounds and whose work in the archaeological field is well known, says: "They were most likely used in the process of making canoes from burned out logs." He has not found them in Kansas, where "boat tools were very scarce, simply because they used bull-boats instead of log canoes.

This, then, is the form of stone implement which has come to be designed by the name of "spud" by Western archaeologists, and of which curiously enough little or nothing has been written.

The majority of the implements illustrated and described in this article as Wisconsin types, belong to this class. Dr. Synder and others have informed me of the occurrence of these implements in Illinois; Hon. J. V. Brower, Prof. T. H. Lewis, Rev. E. C. Mitchell and others, of their being found in various localities in Minnesota and North and South Dakota. The writer has seen specimens from Ohio, Michigan and Iowa. It is quite probable that further research will show them to be quite common in nearly all of these states.

In the Terry collection in the American Museum of Natural History, there is an example (T 2011) of this type. It is of limestone and comes from Charlestown, Missouri.

Mr. H. P. Hamilton has a specimen which was found near El Paso, Texas.

CLASS C.—Broad flattish implements, generally of comparatively small size.

Blade broad, nearly circular, elliptical or semielliptical in shape, edge fairly thick and smooth, or thin and sharp, shoulders rounded or sharply pointed; handle narrower than the blade, flat or convex, sides straight or curved, parallel or slightly tapering to the top.

Some specimens have the handle perforated, as if it were intended to attach them to the person by means of a thong passed through the hole. It is quite possible that some of these and of the finer unperforated forms as well, are, as has already been suggested, deserving of being classed with the stone ornaments known as gorgets. Their generally small size, soft material, shape, finish, and the condition of their edges, would appear to make such a separation desirable and proper.

In the making of others, greenstone and other hard rocks have been employed. Many of these are roughly made and have quite sharp cutting edges. There is a tendency on the part of some of these toward a scraper form, and it is quite likely that they were utilized for such or a similar domestic purpose.

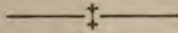
There appears to be but little reason for associating any of these implements with the large paddle-form (Class A) as some writers have done. Some examples might be included with the former class (B) as medium types.

Implements of this class are said to be of fairly common occurrence in the South, and specimens are to be seen in various public and private collections and have been described by various authors from Kentucky, Tennessee, Arkansas, Virginia, North and South Carolina, Georgia and Florida. The writer has sketches of several specimens which were found in Ohio.

Mr. W. H. Ellsworth formerly possessed two specimens of this class, one made of slate and the other of red sandstone, which were found near Stafford, Tolland County, Connecticut.

From Prof. Lewis, I have outlines of a perforated type found at Lansing, Iowa, and of unperforated types from De Soto, Vernon County; Soldiers Grove, Crawford County, and La Crosse, La Crosse County, in Southwestern Wisconsin.

He has likewise called my attention to the existence of a class of copper implements of a shape quite similar to some of these. They were found at Lake Chetek, Barron County, Wisconsin; at St. Paul, Minnesota, and at Ontonagon, Michigan. He also states that in the last edition of Pickett's "Alabama" there is rudely pictured a copper spud, which is said to be 18 inches in length, 7 inches in width across the blade, and 3 inches across the handle. There were five other specimens of somewhat smaller size. I have been unable to see this work, or to learn of the present location of these specimens.



## THE PEOPLING OF ASIA AND AMERICA COMPARED.

BY STANILAND WAKE.

There are various facts which support the idea that the civilization exhibited by the native population of the western portion of the American Continent, at the time of the discovery by the Spaniards, possessed features which required them to have been at some time or other in contact with peoples of Southern Asia, if not also with the ancient Egyptians or Phoenicians. The barbaric splendor seen in the religious and higher social life of Mexico and Peru, as well as of Central America, resembled in many respects that of Southern Asia, which is thought by some writers to have been the original home of much of the culture found by the Spanish conquerors on the American Continent. On the other hand, Central America has been credited with being the source from which the ancient Chaldeans and Egyptians derived most of their civilization. We have here a very interesting problem which may never be completely solved, and which, nevertheless, may have light thrown on it by reference to data we already possess. It is advisable to distinguish clearly between origin of race and origin of culture. For, a people may have lived for hundreds or thousands of years completely isolated from the inhabitants of any other area, and then through conquest or some other agency, may be brought into close association with another people from a considerable distance, resulting in a complete change of social life. The conquest of the Britons by the Romans furnishes a case in point. The description given of the Britons by Latin writers when the Romans first came in



contact with them, shows that they may with propriety be described as being then in a low stage of barbarism. And yet they took so kindly to Roman culture, that by the time the Roman occupation came to an end they had adopted the habits of their conquerors, and had lost the capacity to defend themselves successfully against the northern barbarians whom the Romans had not cared to subdue. A similar change took place in the social and religious life of the native inhabitants of the American Continent, consequent on the Spanish conquest, where this became actually effective. The civilization found by the Spaniards to exist in Mexico and Peru and in Central America was highly developed along certain lines and had much in common with the culture of certain Asiatic peoples, and the question arises how this similarity is to be explained.

The actual place of origin of civilization or of a particular series of ideas is in itself a matter of indifference, although its identification, if possible, is desirable in the interests of science. In many cases the relative influence of peoples must remain a question of probabilities; and a probability in favor of a particular conclusion as to the relations between peoples of the American and the Asiatic Continents may be inferred from a series of facts which have not yet received due consideration. The age of a continent is judged of by reference to geological data, and although such data may not be sufficient to enable the exact age of the area to be calculated, yet by comparison with other data of the same kind the relative ages of two such areas may be established. Similarly, by reference to geographical data calculations may be made as to the time during which a region has been inhabited by man, or at least as to which of two regions has been thus populated for the longer period. This is an important consideration, as it may be found that ideas which were supposed to have been derived by one people from another, were probably in the possession of the former at a time when they could hardly have been known to the latter. For that purpose it is important first to ascertain what was the geographical condition of the American Continent at the time of the discovery by Columbus, and then form an estimate of the volume of its human population. As to the first point, it may be said with confidence that four hundred years ago a very large proportion of the North American Continent east of the Rocky Mountains was covered with dense forests, which had been cleared away in places for town or village sites, with patches for cultivation, particularly by river-courses; and that the remaining portion of its surface consisted of comparatively open prairie, over which the wild buffalo and the wild Indian roamed together, or of arid regions the inhabitants of which must always have been few in number. West of the Rocky Mountains, far down into Mexico, much the same state of things prevailed, but further south a large portion of the country was cultivated, and this statement applies also to



much of the territory along the Pacific coast of South America, west of the Andes. The lowlands east of the Andes were then covered, as in great part they are now, with almost impassable forests, penetrated, however, by numerous rivers, large and small; while further south the country was composed of vast prairie-like plains.

From the geographical conditions of the country, as above described, it is quite certain that neither North America nor South America was densely populated when first discovered by Europeans. There were many tribes in the Northern continent scattered along the borders of the Great Lakes and the banks of the rivers and rivulets, especially in the valleys of the Mississippi, Ohio and Missouri Rivers, or wandering over the great plains of the West; but this would give a very sparse population for the whole continental area, even if the more numerous inhabitants of Mexico and the adjoining territory of Central America be added. The same must be said in relation to South America. West of the Andes was a more or less sedentary population, comparable in numbers to that of Mexico and Central America. East of the great mountain range, however, the human inhabitants were probably not nearly so numerous as were the dwellers on the Northern continent east of the Rocky Mountains. It is not necessary for the present purpose to go into calculations, which must be necessarily more or less uncertain, but it may be regarded as positive that the population of the American Continent was never greater than it is at present, excluding even the inhabitants of the United States. Thus we may assume that four hundred years ago this continent had about forty millions of human inhabitants, the great majority of whom were located between the great mountain range and the Pacific from Mexico to Chili. It may be thought that at a much earlier period the continent was more densely populated, and the existence of numerous ruined cities and habitations may be referred to in support of the idea. But such a contention has little weight. Because a city is in ruins we cannot infer that it was destroyed by enemies and its inhabitants massacred. It is true that during a certain period the sanguinary rites of the Mexican religion required the yearly slaughter of thousands of human victims, but other causes must be sought for the general depopulation of cities and districts. Mr. A. F. Bandelier in "Papers of the Archæological Institute of America," American Series (page 155), expressly asserts that the existence of numerous ruins in Arizona and the Southwest indicates numerous shiftings, and not a large simultaneous population. Many settlements are known to have been voluntarily deserted, and the traditions of nearly all the Indian tribes refer to migrations from one place to another. Voluntary removal may take place even from cities with many inhabitants, and hence the existence of large ruined cities in Central America furnish no evidence of destroyed populations.

In India and Central Asia ruined cities are not uncommon, and it is known that in some cases at least they have been abandoned owing to natural causes, and even at the mere behest of a king, who wished to erect not only his own palace but his own city, to which the inhabitants of an older adjacent city were compelled to remove. In Central Asia extensive districts, with the cities within them, have been rendered uninhabitable by the encroachment of desert sand, by which the buildings are now completely entombed.

Let us now see what is the geographical condition of the great Asiatic Continent or, say, of the southern half of it, giving an area comparable with that of the American Continent. Southern Asia is bounded on one side chiefly by the waters of the Indian Ocean and of the Pacific Ocean, and along the margin of these great water basins are to be found its most thickly populated areas, portions of which are covered with forest, but exhibiting nothing in this respect comparable to the vast forests with which so large a part of the American continental area was at one time, and in some parts still is, covered. The slopes of the Himalayas and the high plateaus north of this great mountain range may be compared to the rising grounds and the highlands of the Rocky Mountains and the Andes, neither of which, however, present any analogy to the great sand deserts of Central Asia, unless it be the waterless regions of the Southwest of the United States. It is probable that the deserts of Central Asia at one time teemed with human life, as in many parts exist mounds that mark the sites of former cities; some of which have been disintombed and were found to have been overwhelmed by waves of sand sometime after the introduction there of the Buddhistic faith. We may, therefore, exclude from consideration the former populations of the submerged cities, and notice, only the peoples of the more southerly portion of the Asiatic Continent, many of whom have traditions of migrations from Central Asia. What was actually the population of India and China four hundred years ago, we cannot say with certainty. Wars, pestilence and famine have in past ages often prevented any increase of population over long periods, and such agencies operate still to offset the effect of the activity of the generative process, no less in the human world than in the animal world. It is very improbable, however, that at any time, under the most favorable circumstances, were the inhabitants of those two countries nearly so great in number as at present. As a rough estimate, we may say that the population is now double what it was four hundred years ago, notwithstanding the destructive agencies which have been at work throughout a large portion of the period. Accepting this view, we may say that about the time of the discovery of the American Continent by Columbus, who was in search of "Cathay," China had a population of about 200,000,000, and India a population of

about 150,000,000. If we add 50,000,000 as the number of inhabitants of the other countries of Southern Asia, including Asia Minor, Arabia, Persia, Thibet, and Malaysia, we have 400,000,000 of people, against the 40,000,000 of the American Continent. The latter is a very liberal estimate, as the western half of this continent, outside of the United States, has now only about this number of inhabitants, and it would be reduced to 20,000,000 if the rule as to doubling in four hundred years were applied to it during the most recent period of that length, as in the case of Southern Asia.\*

There is just as much reason for applying the term "aboriginal" to the peoples of Southern Asia, as there is for ascribing this character to the pre-European population of the American continental areas, and as there are no grounds for supposing that under ordinary conditions the increase of mankind takes place more rapidly in Asia than it does in America, we may safely assume that a much longer period was required for the production of 400,000,000 inhabitants of Southern Asia, than for that of the so much less numerous population of pre-Columbian America. It is, of course, impossible to make any reliable estimate of the length of time either of those areas has been inhabited, but we may apply an arbitrary rule to both areas alike, and thus make a comparative calculation of the number of the inhabitants at a particular past epoch. Let us suppose that under former prevalent conditions populations doubled in the course of each period of four hundred years, as above suggested, then eight hundred years ago the inhabitants of Southern Asia numbered 200,000,000, and four thousand years ago they would be less than 1,000,000. This number does not, of course, give the actual sum of the population of those two countries at that time, which was undoubtedly much greater, showing that the doubling of population must have required on an average much longer than four hundred years, but it may be used for comparative purposes. If we apply the same rule to the American Continent we shall see that four thousand years ago its inhabitants would be less than one hundred thousand in number, nearly all of whom would reside along the Pacific coast area from Mexico to Chili, as the population of Southern Asia would be congregated chiefly in China and India, the adjoining regions. Supposing that number to be much too small, Southern Asia would still have a relative preponderance.

We come now to the question whether it is more probable that a small population of some part of the American area should have originated a civilization and transported important features of it to the Asiatic area, with its much larger population and supposedly of at least equal civilization, or that the

\*As to the period of four hundred years taken for doubling, reference may be made to a recent writer on population, who says: "Within one century the population of various countries of Europe has increased more than it had increased for several centuries before," and that the same tendency is observable in the New World



reverse process occurred. How far the ruined structures of Central America and Mexico will compare with those of greater India, or the Peruvian mines with those of Western Asia, is a question. But the very number and magnitude of those structures on the American Continent is evidence that they must be referred to a more recent period than that of 2100 B. C., or four thousand years ago. At the date of the commencement of the Christian era America, according to the rule laid down, would have a population of about 3,000,000 only, and it is questionable whether their civilization, if purely native, would then have been sufficiently developed to enable them to design and carry out the great works which covered various districts from Mexico to Peru. Nor would such have been the case with double that population located at separate centers. Notwithstanding its much greater population, the ruins met with within the Indian area appear not to be of any great age. In India the oldest structures, such as the rock cut temples, do not antedate the introduction of Buddhism, and, indeed, date only two or three centuries before Christ. The ruined cities and temples of Cambodia are not only superior to any architectural remains in India proper, but they are more ancient, and yet they were not erected before 443 B. C. Local traditions and the Cambodian annals give this as the date of the arrival in that country of an Indian prince, whose marriage to the daughter of the king was celebrated by the erection of the capital Angkor-Thom. The Cambodian architecture is Indian in general character, but it is said by Fergusson to show traces of Roman Doric, just as the Hindu-Naga temples of Cashmere show the influence of the earlier Grecian Doric. Hindu mythology furnishes many of the subjects represented in the carving with which the Cambodian buildings are decorated, but Buddhist subjects are introduced, confirming the native accounts of the encroachment of the Buddhist element on the Brahmanic, and thus helping to establish the date of the buildings themselves. One feature of Cambodian architecture is the use of a great serpent, carved in stone, to form a balustrade, the serpent being supported sometimes by human giants, and at other times by pigmies, as depicted in Delaporte's work on Cambodian architecture. A similar feature is met with in the ruins of Central America, where a great serpent,—the rattlesnake, however, instead of the cobra of India,—is employed for a similar purpose, and is supported by dwarf human figures as in Cambodia, although the treatment is different.

There are other features which the ruined structures of Central America possess in common with those of Cambodia (apart from the similar erection of buildings on terraced mounds) such as the carving of gigantic human heads or faces, and of heads with a long proboscis, which in Cambodia are elephants' heads, on the face or at the angles of buildings. If these facts can be taken to show an actual connection between the builders of



the two series of structures, then we are able to give an approximate date for the erection of some, at least, of the ruined buildings of Central America. For, from the general considerations above adduced, and owing to the fact that the ideas embodied in Cambodian architecture have had for the most part an Indian origin, modified somewhat by western influence, we must suppose that America has been indebted to Asia for ideas, rather than the reverse, and that the buildings of Central America were erected later than those of Cambodia. Hence, we shall probably be not far wrong in assigning a period from between the beginning of the second century before and the end of the second century after the commencement of the Christian era, for the erection of the most ancient of the ruined cities of Central America; some of which would seem to have been occupied at the time of the Spanish conquest by the peoples who built them.

It is known that extensive migrations from India and Indo-China to the islands of the Indian Archipelago and the Pacific took place, probably as the result of the conflicts between Brahmans and Buddhists, during that period and still later, and as wave followed wave of migration, it would not be surprising if peoples from that Asiatic region reached Central America. The ruined temples of Java are said to have features in common with those of both Cambodia and Central America, and Java, may possibly have been the actual starting point for a migration which reached this continent. Another place of origin might be assigned, however, for such a movement. The temples of Cambodia are closely connected with the Naga or serpent cult, the Indian headquarters of which have been with good show of reason assigned to Cashmere, and as there are evidences of extensive migrations from the region of the Indus, it is not impossible that persons sailing from the Arabian Sea carried to Central America the Naga architecture, and with it a religious cult. The Arabs and neighboring peoples were the most adventurous sailors of the Old World two thousand years ago. It may be, indeed, that Asiatic ideas have been carried to America at different epochs, as there are points in which the architectural relics of Yucatan may be thought to show contact with Babylonian thought, and, even, with that of Greece.

## PHILIPPINE STUDIES.--VII.

### PLACE-NAMES DERIVED FROM PLANT-NAMES.

BY ALEXANDER F. CHAMBERLAIN.

Very common, as was stated in the discussion of the derivation of Manila (Vol. XXIII., p. 333), in the East Indies is the custom of naming places after some flower, plant, tree, etc., found in the neighborhood. The present paper deals with some other place-names originating from the consideration of their vegetal environment.

1. AGOHO. Town in S. Union, Luzón; point in S. E. Sámar. In Tagal the "cypress vine" (*Quamochlit pennata*), introduced from Mexico, is called *agoho*. In several Philippine dialects (Tagal, Visayan, Pampangan, Ilocan) the *Casuarina equisetifolia* is also termed *agoho*, or *agoo*. The place-names *Agojo*,—town in the island of Camiguín, north of Mindanao; point in Catanduanes,—probably belong here also.

2. BALAOANG. Town in Union, Luzón. In Tagal the tree *Mocnera thurifera* and its resin are called *balao*. The name *Balaoang* would signify "place of *balao*." Mt. *Balao* in Batangas, Luzón, may have its name from the same source. The Tagal word *baláo* means "red."

3. BALTONG. Point in Negros. In Tagal the *Phaseolus max*, or "black gram" bean, is called *balatong*. The *Cassia occidentalis*, introduced from America, is known as *balatong aso*, "dog *balatong*."

4. BALETE. Town in S. Mindanao and N. Panay. In several Philippine dialects (Tagal, Pampangan, etc.) the *Ficus Indica*, or banyan-tree, is called *balete*, or *balite*.

5. BANOD. Town in island of Marinduque. A Tagal name of the *Bauhenia scandens* is *banot*.

6. BATANGAN. Mountain in E. Mindoro. In Cebuan the so-called "velvet-leaf" (*Cissampelos parcira*) is named *batang-batang*. The name *Batangan* would mean "place of *batang*." The town-name *Batangen*, in S. W. Luzón, is the same word.

7. BAYABAS. Mountain in S. Luzón, mountains N. W. Luzón. A Tagal name of the guava (*Psidium guayava*) is *bayábas*.

8. BITOON. Town in Cebú. One of the Visayan names of the *Barringtonia speciosa* is *bitoon*, or *bitung* (*bitong*).

9. BOCABOC. Island and strait northeast of Negros. A Tagal name of the *Scævola lobelia*, a shrub used in paper-making, is *bocáboc*.

10. BOTONG. Town in North Mindanao. In several Philippine dialects (Tagal, Visayan, etc.), one of the names of the *Barringtonia speciosa* is *botong*.

11. BULAC. River in South Leyte. Also *Bulac-bulac*, point in the island of Burias, and *Bultcan*, province and town in central Luzón. The name in Tagal and several other dialects of the cotton-plant (*Gossypium Indicum*) is *bulac*, which word means also "raw cotton," etc.

12. BURI. Island west of Sámar. Points in South Batangas, South Camarines, Corregidor Island (Luzón). In several Philippine dialects (Tagal, Visayan, etc.) the talipot-palm (*Corypha umbraculifera*) is called *buri* or *buli*.

13. CALUMPAN. Point in South Masbate. A Tagal name of the *Sterculia foetida*, a nut-tree, is *calumpang*.

14. CAMOTES. Islands west of Leyte. The sweet potato (*Batatas edulis*), introduced from America, is known in Spanish, Tagal, and several other Philippine dialects, as *camote*, or *camoti*, names derived from the ancient Mexican (Nahuatl) term *camotl*. The word *Camotes* is the Spanish plural.

15. CANAMAI. Point in Negros. A Tagal name of the *Diospyrus multiflora*, whose poisonous fruit is used to kill fish, is *canomai*.

16. CATMON. River and point in Cebú. Point and inlet in Negros. Mountain in Leyte. The Tagal name of the *Dillenia speciosa*, the acid juice of which is used for vinegar, is *catmón*.

17. COGON. Point in the island of Panaón, southeast of Leyte. The *Imperata cylindrica*, a reed-like grass, used for thatch, is called in several Philippine dialects (Tagal, Visayan, etc.) *cogon*, or *cogon-cogon*.

18. DALUGDUG. Point in Leyte. In Visayan the *Guilandia bonduc*, whose seeds are used medicinally, is called *dalugdug*.

19. GAPAS. Mineral spring in province of Batangas (Luzón). In Visayan the *Vitex trifolia* is called *gapas-gapas*.

20. HAGONÓY. Town in province of Bulacán (Luzón), lake in Luzón. In several Philippine dialects (Tagal, Visayan, etc.) the *Spilanthus acmella*, introduced from Mauritius, is called *hagonoi*, or *agonoi*.

21. ISIO. Town in Negros. A Tagal name of the *Ficus oppositifolia*, a small fruit-tree, is *isio-isio*, or *isio*.

22. LAMBAYON. Point in East Mindanao. In several Philippine dialects (Tagal, Visayan, Ilocan, etc.) the *Ipomœa pes-caprae* is called *lambayong*, or *lampayong*.

23. LAUAAN. Mountain in Northeast Leyte, and on the island of Biliran. The *Mocanera verniciflua*, a large timber-tree, is called in several Philippine dialects (Tagal, Visayan, etc.) *lauaan*.

24. LAYA-LAYA. Island west of Sámar. In several Philippine dialects the common ginger-plant (*Zingiber officinale*) is called (as in Tagal) *laya*.

25. LIBAY. Town in Dapitan, Northwest Mindanao. A Tagal name of the *Achyranthes aspera*, a weed, is *libai*.

26. LUCBAN. Town in Tayabas (Luzón). In Tagal *lucban* is the name given to the shaddock (*Citrus decumana*). *Lucbán* is also the name of a distinguished family of Filipinos opposed to the Americans in the Philippine war. In modern Tagal *lucbán* also means "orange-tree."

27. LUMBANG. Town in province of Laguna (Luzón). In Tagal the *Aleurites triloba*, or "candle-nut," is called *lumban*.

28. MALABUYOC. Town in Cebú. A Tagal name of the *Cassyta filiformis* is *malabóhoc*.

29. MONGOS-MONGOS. Island west of Luzón. A Tagal name of the *Phaseolus max* is *mongos*.

30. NAGA. Towns in provinces of Albay and Camarines (Luzón). Town in Cebú. In Visayan and some other (Camarines, etc.) Philippine dialects the timber-tree *Pterocarpus pallidus* is called *naga*.

31. NIPA. Port in Panay. Also *Nipa-nipa*, inlet in Sámar. One of the Tagal names of the *Nipa fruticans*, a palm whose leaves are used for thatch, and whose sap is used to produce an intoxicating liquor, is *nipa*.

32. NONOC. Town in Surigao, Northwest Mindanao. One of the Visayan names of the *Ficus Indica*, or banyan-tree, is *nonoc*.

33. PANABULON. Island, southeast of Panay. One of the Tagal names of the *Scævola lobelia*, used in paper-making, is *panabolong*.

34. PANAON. Island and strait southeast of Leyte. Point in North Mindanao. One of the Tagal names of the *Mocanera verniciflua* is *panao*. The word *Panaón* would mean "place of *panao*."

35. PANDAN. Towns in Catanduanes and Panay. Island west of Mindoro; island group near Bohol. Inlets in North Mindoro and West Panay. Points in Negros, Southeast Mindoro, East Leyte, East Batangas (Luzón). Mountains in Guimarás and Southwest Leyte. In several Philippine dialects (as in Ilocan) the *Terminalia catappa*, or "Indian almond," is called *pandan*.

36. PINA. Island south of Masbate. The usual Philippine name for the pine-apple, introduced from America, is *pina*, a Spanish word.



37. PITOGO. Town and harbor in Tayabas (Luzón). Island and strait east of Carmarines (Luzón). One of the Tagal names of the *Cycas circinalis*, or sago-plant, is *bitogo*, or *pitogo*.

38. SANTOLAN. Mineral spring in Pasig (Luzón). A Tagal name of the *Sandoricum Indicum*, or sandal-wood is *santol*. The word *Santolan* would mean "place of *santol*."

39. SUA. Town in Zambales (Luzón). Points in Southeast Leyte and East Luzón. Mountain in the island of Biliran. In Tagal the *Citrus torosa*, or double-leaved citron, is called *suha*. The word also means "orange-tree."

40. TABIGUI. Point in North Bohol. One of the Tagal names of the *Xylocarpus granatum* is *tabigui*. The word *Tabigui*, name of a point in Batangas (Luzón) belong here also.

41. TABOGON. Town in Cebú. A Tagal name of the melon (*Cucumis melo*), introduced from continental Asia, is *tabogo*. The word *Tabogón* would mean "place of *tabogo*."

42. TALISAY. Towns in provinces of Albay, Batangas and Camarines (Luzón). Town in Cebú. Points in Northwest Negros, Rapu rapu (southeast of Luzón), and in islands of Semerara and Ticao. Mountain in Misamis (Mindanao) and in Leyte. In several Philippine dialects (Tagal, Visayan, etc.) the *Terminalia catappa*, or "Indian almond," is called *talisai*. The word *Talisayan*, name of a town in Mindanao and a mountain in Leyte, means "place of *talisai*."

43. TANAGON. Point in island of Daram, west of Sámar. In several Philippine dialects (Tagal, Visayan, etc.) the *Kleinhovia hospita* is called *tanag*. The word *Tanagon* would mean "place of *tanag*."

44. TAYUN. Town in Abra (Luzón). In several Philippine dialects (Tagal, Pampangan, Visayan, etc.) the indigo plant *Indigofera tinctoria* is called *tayon* (*tayung*).

45. UBIAN. Groups of islands in Tawi-Tawi and Pangutaran Archipelagos. Harbor in Tawi-Tawi. A Tagal name of the *Dioscorea alata*, a species of yam, is *ubi*. The word *Ubian* would signify "place of *ubi*."

These examples will serve to indicate the extent to which plant-names enter into the geographical nomenclature of the Philippines. For the purposes of such investigations the following works will be found of value: Pickering, C., "Chronological History of Plants" (Boston, 1879), Blanco, Fr. M., "Flora de Filipinas" (Manila, 1837,—also new and enlarged edition, Manila, 1877-1880); De Candolle, A., "History of Cultivated Plants" (New York, 1883); Algue, José, "Atlas de Filipinas," "Atlas of the Philippine Islands" (Washington, 1900).

## THE MIGDOL TOWERS OF EGYPT AND PALESTINE.

BY JOSEPH OFFORD.

Member of the Society of Biblical Archaeology and Japan Society.

The magnificent volume of "Tebtunis Papyri" published under the auspices of the University of California and the Egypt Exploration Fund, among other instances contains, in three of its papyri, what may be utilized as an object lesson to indicate how these apparently valueless documents in reality are pregnant with information which may be used to link up a number of previously isolated archæological and philological matters, and to throw light upon many an obscure but interesting historical connection.

Paypri numbers 80, 81 and 82 all concern a village named Magdola,\* situated on the site of the present Medinet-Nehas, in the Fayoum. This, however, is not the only Magdola of the papyri, for in Grenfell & Hunt's "Fayoum Towers," it speaks of a Fayoum tower named Magdola, or Magdolos.

Moreover, the name is found as the title of a village in a Demotic papyrus of the time of Ptolemy Philopater given by Mr. Griffith in a monograph upon the manuscript printed in the "Proceedings of the Society of Biblical Archaeology" in 1901.

The second Magdola was in upper Egypt, to the west of Thebes. Magdola is derived from the Semitic word "Migdol," "a tower," of which more will be said presently. Upon this subject the papyri afford interesting details, for we have in several of them receipts for tax payments for the upkeep or guarding of Magdola. Reference may be made to papyri numbers 54, 106, 239, 316, &c., in "Fayoum Towers." In some of these a μαγδωλοφύλαξ occurs, and in the Berlin Greek Papyri, published in "Griechische Urkunden," 282-13, πυργωμαγδωλ occurs.

We therefore see the Hebrew Semitic word was quite common in the Greco-Egyptian period of the Ptolemies. But, the word was Egyptianized far earlier than this, for at the time of the Israelite Exodus there was a Magdol, or Maktal, in the Sethroite Nome. Exodus xiv., 2, speaks of the fugitives "encamping between Migdol and the sea."

We are not, however, restricted to Old Testament proof of the antiquity of this name for sites in Egypt and Syria, because Brugsch in his "History of Egypt from the Monuments" quotes an inscription of Rameses III. celebrating a victory at Migdol.† Another was near Pelusium in the Sethroite Nome,

\* Deissmann in his "Bible Studies" has some remarks upon Migdol-Magdola in Egypt, but at the date of his writing the Fayoum Towers and Tebtunis papyri were unpublished.

† This was in Phœnicia or Syria.

and had the duplicate of Samut. He also gives a most interesting text of Amenophis, which he says reads: "From Migdol (? Samut) as far as Sene on the frontier of the land of Kush."

This is the Egyptian stereotype annalistic phrase for describing their Nile Valley Kingdom, like the English speak of "From Land's-End to John of Groats," which Ezekiel uses almost word for word in prophesying the desolation of Egypt in his 29th chapter, where he speaks of "from Migdol to Seveneh, even unto the border of Kush."

The date of the adoption of the word by the Egyptians probably preceded that of the well-known papyrus in which a scribe of conservative views bitterly laments that young fashionable Egyptians used a number of Semitic words alien to their true and better mother tongue. It apparently became changed from its true pronunciation after its importation into the Egyptian vocabulary, because there is every reason to believe that the ancient Egyptian town names Ma-k-to-ra or Ma-k-ti-ra are this word.

In one of the Anastasi papyri two runaway slaves are reported to have escaped into Syria by passing the north-eastern frontier wall of (or at) the Watch-tower ma-k-ti-ra, of the Pharaoh Seti I.

In Jeremiah a Migdol associated with Tahpanhes, and Noph is spoken of as a residence of the Jews in Egypt.

This was, however, probably in the Delta, as, of course, was the Magdolos, near Pelusium, spoken of by Hecateus of Miletus, as quoted by Stephen of Byzantium.

*Μαγδωλός πολις Αιγύπτου Ἐκαταῖος περιηγήσει τὸ ἔθνικόν Μαγδωλιτης.*  
This Magdola is mentioned by other classical authors, probably the last being in the "Itinerary of Antonienus," as given in Parthey's edition "A Serapiu Pelusio mpm. LX., Thaubasis VIII., Sile XXVIII., Magdolo XII., Pelusio XII."

Being a common word in Greco-Roman Egypt, it also descended to the Coptic and we have the names in the Sahidic texts *μεγτωλ* and *μεχτωλ*, from which, doubtless, came many Mashtools of Arabic Egypt; sites of the watch-towers or forts which defended the village and gave it its name in Pharaoric times, though it may be the Arabic word for a plantation.

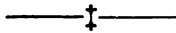
Returning for a moment to the pre-Mosaic Migdols of Egypt: they were well known, because No. 597 of the "Tel el Amarna Tablets" says, "Behold, Acco is like Migdol in Egypt, and let not the king permit these men (the enemy) to occupy the city." Meaning it was a frontier fortress of value, like the Migdol of the Delta. Two Syrian cities named Migdol also occur in the Tablets numbers 237 and 281.

Before leaving the Migdols of Egypt, it should be noted that the new Greek papyri prove the word was not confined in its usage to sites in the Delta, that is near to Syria, and thus might be ascribed the appellation having been assigned to the place during the Hyksos, or some Syrian, occupation of that



part of the country, for the Magdola of the papyri, both Greek and Demotic, are in Middle Egypt.

A word in conclusion about the Migdols of Palestine; like the watch-towers of the warlike time after the invasion of the Promised Land, they were many, as any Bible Dictionary tells. One is later famous because "Mary Magdalene" dwelt there. This distinctive appellation of hers, derived from the root-word for a tower, an eminence, from which watch and ward for a foe could be kept, its original meaning and derivation obliterated by time; has in the New World, out of honor to the name of this Mary of the New Testament, been bestowed as title for one of the mighty rivers of South America.\*



### DISCOVERY OF PLATINUM AMONG THE ANCIENT EGYPTIAN METALS.

FROM THE FRENCH OF M. BERTHELT.

[Communication to the Académie des Sciences.

I had occasion to study lately a metallic box, covered with hieroglyphic inscriptions, presented for my examination by M. Bénédict, associate custodian of Egyptian Antiquities of the Louvre Museum. It was found at Thebes. It was dedicated by Queen Shoptepit, daughter of King Psammetik I. (Seventh Century before our era). It is covered with designs and inscriptions in gold on one of the faces; in silver on the other.

The study of this object raises numberless questions with regard to chemical analysis applied to archæology and the changes occasioned by time to the ancient technique of its constructors, especially as it relates to the processes employed for the preparation of the coatings and incrustations of the designs and characters. I shall consider them in detail in a paper which will shortly appear in the *Annales de Chimie et de Physique*; but it may be of interest to present now some facts relative to the discovery of platinum, a constituent of one of the hieroglyphic characters.

This metal was of the color of silver, part of a linear character, detached from the table of hieroglyphic inscriptions. At first, I took it for silver on account of its color; but its chemical properties are quite different.

It is beaten metal of dimensions comparable to other characters, dimensions determined by means of the palmer,† which are almost uniform for each class of characters. For this one, they are 5 millimeters in length, 0.55 in width,

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\* Many ruined Migdols or watch-towers are still to be seen in the Hamra east of the Jordan. Herodotus calls Megadde where Necho defeated Josiah. Magdooie; it may be because near the battle field there was a watch-tower, Migdol, or arose from a scribal error.

† Divided measure of a hand's breadth.



0.23 (after a preliminary treatment with nitro-chlorhydric acid) in thickness.

The following is the process to which it was submitted: The scale was treated first with boiling nitric acid, without being in any manner attacked, as silver would have been. Surprised, I added to the acid twice its volume of concentrated chlorohydric acid, so as to obtain *aqua regia*, and I brought the whole to the boiling point. In these conditions pure gold and alloys of gold and silver are rapidly destroyed. A slight attack, indeed, occurred, but the thickness was not in the least diminished, even by keeping the tube in a water bath at 100° for almost an hour, conditions under which objects of pure platinum of the same thickness would be dissolved; a fact easy to verify. The *aqua regia* did indeed dissolve a small quantity of yellow platinum chloride, whose mixture with a solution of potassium chloride furnishes under the microscope some red crystalline grains. But the resistance was similar to that of certain platinum minerals, rich in iridium and other related elements.

After the repetition of similar treatment, the scale of metal was heated to a bright red for ten minutes, over an enameling lamp, in a small porcelain crucible, with the addition of potassium nitrate, which was quickly decomposed. The scale was noticeably attacked. Still a great part resisted without manifesting any fusion, while retaking a bright silvery luster, which it had partly lost. The mixture of alkali and of nitrates, remaining in the crucible, took on a greenish hue.

The attack was remarkable, because the thickness of the layer in consequence of this treatment was reduced to 0.06 millimeters. The edges had become irregular and jagged. After washing with water, a new boiling with *aqua regia* was made. The new attack was still incomplete. The metal lost its polish and was covered with a wrinkled and yellowish gray coating. The *aqua regia* solution contained some platinum and a little gold, as was proved by the formation of the purple of Cassius. That portion of the metal not attacked resumed its luster under the pestle in an agate mortar; but there remained too little of it to proceed further.

I have given these somewhat detailed observations to show precisely the singular resistance to reagents of a metallic flake, whose initial weight did not exceed five or six milligrammes. This resistance not only surpasses that of gold, but that of pure platinum. It implies the existence of a complex alloy, containing several metals of the character of platinum and also a little gold. This was prepared without doubt from a rare native alluvium mineral, likely to be met with at the same time as native gold, as

mineralogists know. It was perhaps confounded with silver by the ancient Egyptians, because it had been reduced to regular leaves with the hammer, as they were accustomed to do with the nuggets of gold which accompany it.

It is questionable whether the operators submitted to special treatment a mineral whose exceptional character they had not remarked. If they had frequently met with specimens of it, they would have distinguished them by the infusibility and permanency of the metal, as compared with silver. Here is an enigma, which will only be explained when samples of this kind with special hieratic or artistic application shall have been met with among the Egyptian metals.

To ascertain whether these designs and inscriptions of the box enclosed several specimens, it would have been necessary to treat and to dissolve a great portion of it; a necessity which would have required the sacrifice of a precious archæological object. I detached one of the metallic stars at the top of the object, representing the heavens, but I found it consisted simply of silver.

I do not think that platinum has been previously observed among the metals coming from Egypt, even at ancient times. Nor has it appeared, either in Africa or Arabia. Its rarely occurring ores belong to entirely different regions, especially to the Ural and Siberia. But they have been found in the auriferous and staniferous alluvium in Ireland and Brittany, in the Rhine, in Lapland, in Transylvania, etc. There are probably specimens in the alluvium of Nubia and the upper regions of the valleys of the Nile and its affluents.

## EDITORIAL.

### THE RELICS OF THE MISSISSIPPI VALLEY.

The study of the relics of the Mississippi Valley has been followed by various archæologists for fifty years or more, with such diligence that we have now, a fairly reliable source of evidence as to the actual condition of the people who occupied that valley during prehistoric times. The work of gathering the relics has been followed from different motives and with varied success. But, notwithstanding the desultory method, the result has been productive of good, and all that the student has to do now, is to go to the various museums, where private collections are sure to be gathered in course of time, and there study the relics at his leisure. Of course the absence of the people who used the relics will be felt, and the want of familiarity with the life which once existed, but which has so greatly changed, will be realized; still, to the one who has read history and is familiar with archæology, there is no great difficulty in rehabilitating the scene and repeopling the land with a population which shall correspond to that which has long since passed away. It is, however, not merely by taking one locality or one tribe, or even one period of occupation, that the complete lesson is to be learned, but rather by taking the whole great valley through which the Mississippi River and its branches have flowed for ages, as the field for study; then familiarizing oneself with its physical features, its varied scenery, its diverse natural products, its separate divisions, and its former inhabitants, with the various wild animals and creatures which formerly prevailed, and imagine the whole scene to be filled with a diverse population, each engaged in its own activities.

There may, indeed, come before the mind various visions which are unreal, and one may imagine a succession of population which never existed. He may picture out scenes and events which never occurred, and yet when one considers the isolation of the continent in prehistoric times and especially the isolation of this particular region from all other regions in the continent, there is not so much danger of going astray as some have imagined. One good result has followed from the discussion which has gone on during the last half century concerning the difference between the Mound-Builders and the Indians, viz., by this means all the vague and visionary views of the visits and sojourns of foreign people who occupied the region and mysteriously disappeared, have been dispelled, and we are now reduced to the necessity of taking the Indians, even in their degenerate condition, as the sole survivors and



only representatives of the people who formerly dwelt upon this continent, only taking the liberty to designate their former condition by using the term "Mound-Builders," and the present condition by using the term "Indian."

We have already made a map of this valley showing the character of the mounds, and another map which shows the location of the various tribes, and the reader has undoubtedly noticed the correlation between the two maps. But the filling in of the outlines and the peopling of the scene has been left altogether to the imagination.

The work now is to study the relics which have been gathered from these different districts, and draw the comparison between them, so that the two maps may be equally instructive, one map serving as a back-ground, the other map serving as a composition or outline. But the relics themselves serve as the different parts of a mosaic which may help to bring out the figures and make them even more life-like.

In fact this work has been accomplished by some of the State Museums, and whole volumes have been written upon the relics and published at the expense of the State, so that it is an easy task now to identify the relics which belong to a limited district, and understand the peculiar style of art which prevailed in that locality, and even apprehend the mode of life which was led by the prehistoric people who lived there. This is the work which the archæologist has before him. It is not merely the collecting of relics, either as curiosities or as works of art, but the recognition of the life which was led by those who wrought out and used the relics that he has set before him.

It will be the object of this chapter to so describe the relics which have been discovered in the various portions of the Mississippi Valley, that the reader may discover the unity and diversity which prevailed among the prehistoric populations, and gain a picture of the condition of each particular district in prehistoric times.

It is to be noticed that there is a correlation between the artifacts of each particular locality and the physical surroundings, so close that one may read the various collections as he would read a book, and learn through them the employments and modes of life of the people who dwelt in the locality.

There were in this Valley several distinct stocks, each of which was divided up into two or three distinct tribes; each tribe was divided into clans, and each clan having its own villages and clan habitat, so that the collecting of relics from each locality into some large museum is equal to furnishing the local documents by which the history of a people may be learned. There is often an advantage in taking the descriptions which have been written by some intelligent collector, then placing them together with others, and from the whole series learn the style which prevailed with the particular tribes, and



at the same time recognize the difference between the tribes. There is, however, a work for the student which is broader than this. It is to take the literature which has been written about the different tribes, and from this learn the life which was formerly led, and by this means apprehend the significance of each article which may have been preserved, and by readjusting the fragments really get a new mosaic of the same scene.

Some may say that the history of the Indian tribes is not important enough to give so much attention to it; they are a doomed race and are likely to disappear. But this is not becoming to any man who is engaged in the study of ethnology, and is not worthy of notice. It is, however, not merely a question about the Indians, for there is hidden behind the record contained in the relics another question in reference to the origin of the Mound-Builders and the Indians and their



*Effigy Pipe.*



*Bear Pipe.*

relation to the tribes and races of the Old World, and the larger question of the peopling of the continent is brought before us by the solution of this problem. The similarity of the customs of all people who have reached certain stages is also made apparent, and the whole subject of the origin of art, the origin of religion, the growth of civilization, are all concerned in the answer which we shall receive, from the study of the rude and primitive objects which lie buried in the mounds. There are, to be sure, many theories which are liable to mislead us; one of which is the theory that we find the traces of a preceding civilization; another, which is just the opposite, is that we shall find a development on this continent entirely separate and distinct from all others. The two extremes are the result of theories rather than actual evidence.

I. We begin with the northern district, that which was situated on the St. Lawrence River, and extended from the

New England coast to Georgian Bay, a region which was occupied by the great Iroquois stock, a stock which was divided into several great tribes,—the Hurons, who were situated north of the St. Lawrence River; the Eries, on the south shore of Lake Erie; the six tribes that formed the Iroquois confederacy in the State of New York, including the Tuscaroras, who were formerly situated south of the Potomac. East of these were the various Algonquin tribes, who dwelt in the region covered now by the New England States. South of them were other Algonquin tribes, such as the Delawares, Powhattans, and the Shawnees; and in the same region were various tribes belonging to the great Dakota stock. Now, it is a singular fact that the relics of the Iroquois, the Algonquins, and the Dakotas, were scattered over adjoining regions, yet they were so unlike in their form and appearance and general character, that it is easy to distinguish them from one another, and so we have the means by which we may ascertain the mode of life which was followed by these tribes even in prehistoric times.

The Algonquins of New England never built mounds and, therefore, their relics are left out of the account, and we are shut into the limited district covered by the Iroquois and their congeners. It is to be noticed that throughout this entire region there was a peculiar form of clay pipe, which is easily recognized as belonging to the Iroquois stock, and which we are able to identify wherever found. (See cut.) No such pipes were ever wrought by any other stock, though stone pipes having somewhat the same shape have been found further west. Many of these pipes are portraits and are made to represent the human form, though it is difficult to recognize a resemblance to people. The pottery found in this district was of an inferior grade, and was generally plain and coarsely wrought. The wampum belts were more numerous among this people than any other tribe, and were generally wrought with great care and were preserved as tribal possessions.

Copper relics were not so numerous as they were among the tribes farther north and west, for the reason that the copper mines were at a distance and were in the territory belonging to hostile tribes. Still, the discovery of copper relics at a considerable depth on the south shore of Lake Ontario shows that copper was used by these people in ancient times. Mr. W. M. Beauchamp says:

Besides one hundred and thirty-five copper beads found in a grave, five miles north of Schenectady, Mr. Van Epps reported a native copper axe in the *American Antiquarian* for 1894, found twenty years earlier. Mr. J. W. Nelson reported a fragment of native copper with silver veins, and a double-pointed knife, four inches long. In 1901 Mr. L. Ogden of Penn Yann, obtained a fine copper spear, six inches long. Copper articles were found in opening a mound at Mt. Morris, in 1835. Among Canadian relics is a native copper knife, found with two others on Wolf's Island.

A native copper celt with flanged socket, and a native copper knife from Plattsburg, also native copper spears from



Saratoga Lake, copper celts from Seneca River, copper spears from Cayuga Lake, another from Oneida Lake, two native copper spears with flanged sockets from Oswego, N. Y.; a copper knife from Venice, N. Y.; a copper axe from Auburn, copper celts and arrows from Oxford and Pompey, and a large number of other relics, are depicted in Mr. Beauchamp's Report.

Horn and bone implements are very numerous. They consist of bone awls, bone pins, bone knives, spatulas, bone arrows, bone chisels, punches, needles, whistles, beads, pendants, besides a large number of bone and teeth ornaments, such as beads, bear's teeth, bone carved as human heads, bone pipes, crescents, bone images, combs, and along with these, implements used for fishing, such as fishhooks, harpoons and spears, in great variety of patterns. These also are depicted in Mr. Beauchamp's report on horn and bone implements.

Occasionally there are found in the Iroquois district ornaments made of slate, which resemble those of Ohio, but they



*Maces and Badges from Ohio.*

were probably gained in trade, and were not common among the Iroquois. By far the most common relics are those which were used in war, such as spears and arrows. There are in the New York collections large numbers of pestles which were used in pounding the grain. Most of them were straight in shape, without a flange at the end. Some of them were three feet long, and were probably used in deep mortars made of wood.

II. The second district is very interesting because of the fact that the art of the Stone Age was so much more advanced there than it was elsewhere, and especially because of the fact that so many different tribes passed through the region, each leaving traces of themselves in the relics which have been discovered. This was the home of the Mound-Builders "par excellence," for the mounds are found here in greater number and in greater variety than in any other part of the continent, and in fact in any part of the world. What is more, the

mounds contain a greater number of relics. Some of them show a great proficiency in art. This district is situated in Southern Ohio, and extended from the mouth of Grave Creek in West Virginia to the mouth of the Miami River, but included its tributaries and all the region both sides of the Ohio River between those two points.

The relics and remains are found at different depths, and so present different "horizons," but they are all so highly wrought and so well finished that it is easy to distinguish them from those which were left by later Indian tribes. These horizons show that there were different tribes which dwelt in the region during the mound-building period, each of which was considerably advanced in their art. It is difficult to decide what these tribes were, but if we take the traditions which are still extant among the tribes which formerly dwelt in the Mississippi Valley, but are now in the Indian reservations, we may at least



*Portrait Pipes from Ohio.*

form conjectures in reference to them; especially as the Cherokees and Dakotas both have a tradition that their ancestors dwelt in this region. There is a tradition that was long extant among the Iroquois, that they at a very early date united with the Delawares in carrying on a war with people who were situated on this river and dwelt in villages that were thoroughly fortified, but after long and bloody conflicts they were able to overcome them and drive them out from their possessions. The date of this event is unknown, but it is probable that it was before the time of the formation of the Iroquois confederacy, and perhaps soon after the Iroquois had come into possession of the territory which they occupied at the opening of history, for they speak of migrating together with the Delawares across a great river, and first carrying on a war with the Snake people, and afterward with the people who lived in villages. The interpretation of this story has varied according



to the author who has made a record of it. Heckwelder, who was a missionary among the Delawares, represents the great river, which the two tribes crossed before they entered the Mound-Builder territory, as the Mississippi River; while Dr. Horatio Hale and Dr. D. G. Brinton, judging from the study of languages and the names, as well as the original documents and picture records, concludes that it was the St. Lawrence rather than the Mississippi, and that the contest occurred before the two tribes had become settled in any permanent territory.

The point we shall make in this connection is, that there were two distinct tribes formerly situated on the Ohio River, as well as two tribes that crossed the "Great River." One was



*Portrait Pipe from Tennessee.*

called the Snake People, because of the fact that the snake or serpent was their great divinity and tribal totem. The other was the people who were at the time called the Alleghewis, and, according to all authorities, were identical with the Cherokees. This conjecture is confirmed by the fact that there are still to be seen mounds and earthworks in Ohio which are quite distinct from one another, both in character and location. The Great Serpent at Brush Creek, in Adams County, differs in nearly all respects from the earthworks which are found in the Scioto Valley, giving the idea that they were built by two distinct peoples.

The conjecture formed by the study of the mounds is



*Portrait Pipe from Ohio.*

that the people who built the Serpent Mound were not contemporaneous with those who built the village enclosures, but preceded them; and the tradition represents the wars with the Serpent Nation and the Alleghewi as carried on by a long succession of chiefs.

It is also a remarkable fact that the Dakotas have a tradition among them that they once occupied the valley of the Ohio, and lived in villages and were tillers of the soil; but after the appearance of the buffalo herds in their midst, they changed their mode of life and became hunters, and followed the herds until they reached their later habitat, west of the Mississippi River on the banks of the Missouri River. Now, the point which we make is this: the serpent effigies which have been found in the Dakota territory and on the Mississippi and Missouri Rivers at various points, so resemble that found in Southern Ohio that they convey the impression that the same people built the serpent effigies wherever found. But the relics which have been found in the altar mounds and the earthworks which constituted the village sites near those mounds, so resemble those which are found in the Kanawha Valley and the Cherokee territory that they have given rise to the theory that the Cherokees were actually the people who built the majority of these earthworks. The relics found in the ash-pits, and the structures which have been found near them, so resemble those found in the Stone Graves, that the conjecture is forced upon us that the Shawnees were the third tribe that occupied this region before the date of history.

Now, the record which is contained in the earthworks and relics is never so reliable as that which comes from the art of writing; but if the study of relics or earthworks is of any value to science or history, we ought to gain from it information in reference to the succession of tribes and the periods of occupation, and separate them from one another. We maintain, however, that this work of interpretation has been hindered more than helped, by the various attempts to identify the Mound-Builders with the Indians, for the term "Indian" conveys the idea that they were all contemporaneous and on a common level; whereas the other term "Mound Builder," conveys the idea of great antiquity and suggests the thought that there may have been a succession of tribes during the mound-building period. The social status of the Indians is supposed to be the same among all the tribes, and on this account it would be very difficult to draw a distinction between them were it not for their language and physical appearance; whereas there was a great contrast among the Mound-Builders in their social status, their art products, their mythological systems, their religious symbols and ceremonies, and all that went to make up their inner and outer life.

We think generally of the Indian as a hunter and a savage, but we think of the Mound-Builder as having some degree of

civilization, and this impression is increased by the study of the relics, especially those in the Ohio Valley. Relics have here been discovered which have so modern a look that there is doubt whether they belong to the historic or prehistoric period, but there are other relics which have such an air of antiquity about them, that there is no doubt whatever but that they belonged to prehistoric times; and, what is more, there is difference enough between them to prove that they belonged to a succession of tribes, and not to one tribe of Mound-Builders. To illustrate: the relics which were discovered just before the Centennial Exposition in Chicago, and which came from the Hopewell group of mounds, have such a modern look about them that their antiquity has been doubted by many, and yet it is difficult to identify them as belonging to any known tribe, or to absolutely prove that they were affected by the touch of the white man. On the other hand, the relics which were discovered by Squier & Davis nearly fifty years before, have been acknowledged by all to have belonged to the Mound-Builders' period. A few have thought that even these, especially the carved pipes, were too good to belong to any prehistoric people.

These relics, however, have been subjected to close scrutiny, both in this country and in England, where they are at present, and the universal belief is that they belonged to the Mound-Builders, and prove that the art of the Mound-Builders was higher than that of the ordinary Indians. These relics are distinguished for their highly-polished and delicately-carved pipes, some of which have been called monitor pipes, from their resemblance to the monitors. These carved pipes have been discussed many times. Some have claimed that they were close imitations of the birds and animals which were peculiar to the region; but others contain the figures of birds, such as the toocans, which are only found in Mexico, and of animals, such as the manitus, which were only found in the Gulf States. At the same time there were obsidian arrow-heads from the Rocky Mountains, mica sheets from North Carolina, copper from the ancient mines of Lake Superior, pearls from the seacoast, shells from various distant regions, as well as specimens of cloth and many other articles, all of which reveal a high stage of imitative art; but there were no patterns which could be recognized as belonging to a historic country. The difference between the relics exhumed by Squier & Davis and those discovered by Mr. Moorehead is just this: in the latter we discover patterns and symbols which are known to be common in Europe and are not uncommon in America.

The mica sheets seem to have been cut into patterns by sharp instruments. The spool ornaments seem to have been melted in a mold. The copper axes were hammered into shape by a process different from that common among the Indians.



The conventionality of the symbols and patterns, and the size and number of copper axes, and the peculiar form of the pipes, throw a shade of doubt upon their being of prehistoric origin; and yet they were all discovered in the same locality, and some of them in the same group of mounds as those which have been pronounced by all as a purely prehistoric group. The majority of these relics were placed beside the forms of Indian chiefs, and seem to have been buried as though they were their personal possessions.

This may be said in favor of their prehistoric origin: that the same kind of material was used in these relics which have such a modern look, as was common in all the buried relics of the region—sheets of mica, copper axes, copper spoons, pearls, shell beads, obsidian knives and arrow-heads, brown hematite—and many of them were placed upon altars similar to those discovered by Squier & Davis over fifty years ago. The copper bands that surrounded the wrists of skeletons,



*Bird Pipe from Ohio.*

resemble those which were discovered in Marietta in the early settlement of the place. The bear tusks, flint arrow-heads, flakes, panther teeth, and many other objects show that the people who buried these modern-looking relics were familiar with the wild animals of the forest. The details of this discovery cannot be dwelt upon here, but the "find" forces us to the conclusion that, if the bodies were those of Indian chiefs, they show that the Indians who built the mounds of this region had a wider acquaintance with the products which come from distant parts of the continent, than is usual with the Indians of the present day, and there must have been a wide interchange of products, and no such isolation and separation as has been common since the early days of history.

The cuts show the character of the relics which were peculiar to this district. In these we see that the form and finish of the pipes common here, was very different from that which prevailed elsewhere. We see also that there were various ceremonial objects, which were commonly worn on the person and had a significance at the time which is unknown to us. Among

these we might mention the bird ornaments, which are sometimes called brooding ornaments, and are supposed to have been a symbol of maternity by the women; also articles called the butterfly ornaments, as they have a resemblance to a butterfly. These are supposed to have been used as maces or badges by the chiefs. Spool ornaments were not peculiar to this region, for they are common among the Stone Graves and other localities. These, as well as the shell beads and the perforated tablets and necklaces made out of bear teeth, were the private possessions of persons who were of authority in the tribe or clan, and were, consequently, buried with the body, on the same principle that the jewels and precious things that were found in the treasure house at Mycenæ by Schliemann, were buried as the personal possessions of the king.

It should be said of the Moorehead find, that the imitation of elk horns, made of wood and covered with sheet copper, fitted



*Bird Pipes from Ohio.*

to a crown of copper, bent to fit the head; the copper plates, which were placed upon the breast, the stomach and the back; the cloth of coarse texture in which was interwoven nine hundred beautiful pearl beads; the copper spools and other implements that were placed by the side; the pipes of granite and the spear-head of agate near the right shoulder, and the pipe of very fine workmanship and highly-polished, constituted the outfit of the chiefs of the Mound-Builder tribe, as consistently as did the diadems and many other magnificent objects of gold and silver, made the outfit of the proud Mycænian kings, and, if we use the adjective in describing the kings, we see no reason for not using the adjective in describing the chiefs.

This is certainly true. If the carving of pipes, cutting and polishing stone ornaments, sharpening stone axes, perforating stone tubes, chipping flint arrows, mining, cutting and hammering copper plates, and fashioning copper knives and spools, of molding and ornamenting pottery vessels, of shaping and molding and polishing various stone ornaments, and especially

sculpturing the form and feathers of birds, can be taken in evidence, we may say that the art of the Mound-Builders of this region had reached a higher stage of development than was common among the Indians of this or any other locality, and places them on a higher level, as far as art is concerned, than can be ascribed to many who live in the historic period. We find no such specimens of art among the prehistoric mounds of Europe, and our ideas of the Indian are exalted by the study of the relics as well as by the works.

III. The region which lies on either side of the Mississippi River, especially the northern half, is interesting because of the mounds which abound there, especially the relics found in them. It is well known that there is in the Museum of the Academy of Science at Davenport, a large collection, which contains a great many carved pipes resembling those found in the mounds of Ohio, also copper axes which were wrapped in a kind of coarse cloth, many shell beads and other articles, all of which were taken from the mounds in the vicinity. Dr. Cyrus Thomas has founded his argument as to the migration route of the Cherokees on the similarity of the pipes to those found in Ohio, and seems to think that the Cherokees took a very circuitous route; that they crossed the "Great River" somewhere below Lake Huron, moved westward until they reached the Mississippi River, left their relics there and migrated eastward to the Ohio River, and after their long conflicts with the Iroquois, crossed the Ohio River, passed up the Kanawha River, and finally settled in the mountains of western Tennessee, where they were visited by De Soto and his army.

At the same time Dr. Thomas holds the theory that the Shawnees left the shell gorget which was found by Major Powell near Peoria, and those found by General Thruston in the Stone Graves in Nashville, and those found by his own assistants near the Etowah Mound in Georgia, because of the fact that Stone Graves are scattered over this region, and because these gorgets all have figures on them resembling one another.

The salt mines found in Illinois are quite likely to have been worked by the Shawnees, for they were situated in this region at one time, and the name Chaouanans on the early maps, which is applied to the Ohio River, was taken from the name Shawnees and printed with the French spelling; but the claim that the carved and inscribed shells which have been discovered in these widely scattered regions belong to the Shawnees, seems to have come from theory rather than facts. The Shawnees were Algonquins, and were a tribe of nomads and never reached a very high grade of art, or adopted any such mythology as may be indicated by these figures. Mr. F. H. Cushing has compared them to the mythologic figures found among the Pueblos, and called them "man eagles" or "eagle men"; others have compared them to the mythologic figures



found in Mexico and Central America. The only reason for ascribing them to the wild tribes would be the costumes represented, and yet the warriors were dressed about the same everywhere.

The discovery of a shell gorget was made near the Etowah Mound, containing an inscribed figure, which so resembles the image of Buddha, that Dr. Thomas Wilson took it as evidence of contact with the Asiatic continent, and bases his theory on the evidence. It is, however, unsafe to place any theory on these fugitive articles, as unsafe as it was to take the sacrificial scene found on the tablet at Davenport, to base the theory that the story of the Deluge and Noah and his family was recorded in those tablets.

There is no doubt that the Shawnees were at one time located on the Cumberland River, and it may be that they borrowed many of the forms of art that the Muskogee tribes had for a long time used, but to maintain that all of these artifacts found in the Stone Graves belong to the Shawnees is certainly misleading. The Shawnees were upon the east side of the river, as were other Algonquin tribes, but the Dakotas were on the west side. A branch of them the Winnebagos, were on the east side in Wisconsin. There are many finely-carved stone pipes in the Davenport Museum, resembling those found in the Ohio mounds, but the pattern may have been borrowed, or the pipes secured by the Dakotas before the migration to the west.

The discovery, near Davenport, of a large number of copper axes wrapped in coarse cloth, would identify the people with the Dakotas, or, at least, the Winnebagos, who also had a great many copper relics, but would not quite account for the peculiar pipes which are associated with the axes. The horizons presented by the mounds do not indicate any great diversity of population, and so do not justify the hypothesis that the Cherokees left the pipes here. On the other hand, the absence



*Arrow-Heads from Wisconsin.*

of stone graves in the neighborhood of the Cahokia Mound throws a cloud of doubt over the theory that the Shawnees built that mound and left the relics surrounding them. A more plausible theory is, that we have in this region the meeting place of three great races: the Dakota race on the north and west; the Algonquin race on the east, mainly in Illinois; the Muskogee race on the south, though what particular branch of that race reached the spot is difficult to say.

The Cherokees\* belonged to the Iroquois stock, and seem to have left the majority of their relics somewhat near the Iroquois territory in Southern Ohio, and have left their names on the waters of that river. This, then, is the lesson which we learn from the study of the relics and the traditions. The Dakotas, the Algonquins, and an unknown race formerly inhabited the upper part of the Mississippi River, and extended

down as far as the St. Francis River, and were there up to the time of De Soto's expedition.

It is not our object to prove any theory, but the fact that the pyramid mounds so closely resemble those found along the Mississippi River and along the Gulf States, would indicate that a colony from the great Muskogee stock had built up the



*Copper Axes from Davenport.*

large cluster of pyramid mounds which are situated here.

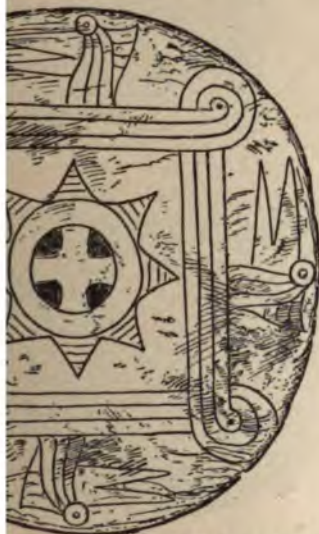
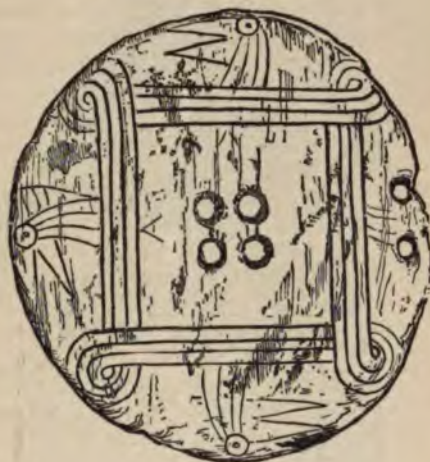
The resemblance of the relics found near these mounds to those found at New Madrid, Missouri; St. Francis River, and near the pyramid mounds scattered through the Gulf States, confirms the impression that they were left here by a branch of the Muskogee stock rather than the Shawnees.

We may say that copper relics are more numerous from Davenport northward than they are below that point, but pot-

\* Dr. Hale says: "Following the course of migration from the Northwest to the Southwest, which leads us from the Hurons of Eastern Canada to the Tuscaroras of North Carolina, we come to the Cherokees of Northern Alabama and of Georgia. Recent investigations have disclosed to us the fact that tribes belonging to the Dakotas lived in early times east of the Alleghenies, and were found by the first explorers not far from the Atlantic Coast."

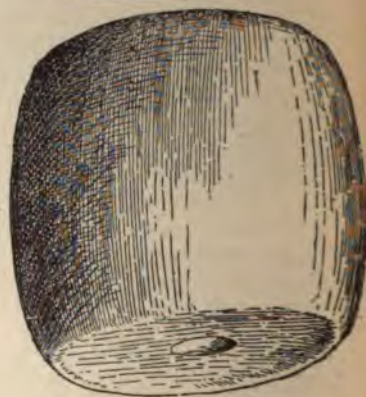
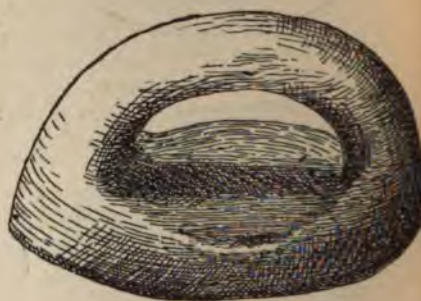
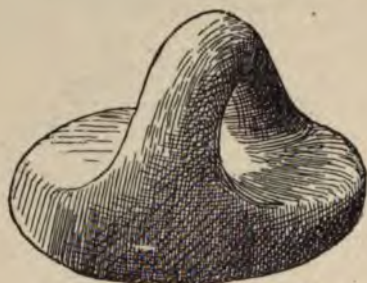
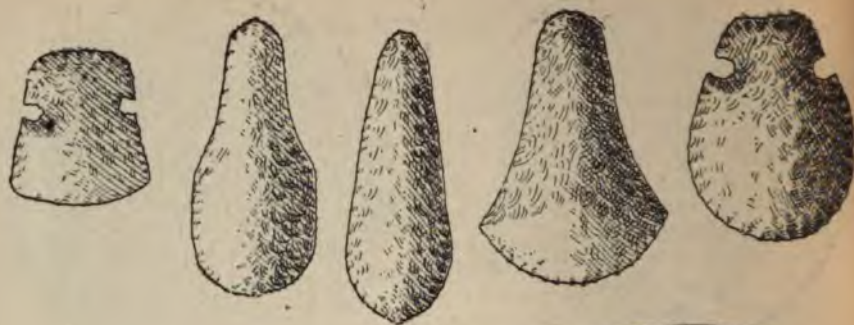
"The country from which the Lenapes migrated was the land of the fir trees; not in the West, but the far North. There can be no reasonable doubt as to the Alleghenies, who gave their name to the Alleghany River, being the Mound-Builders. The evidence of language leads to the conclusion that the course of migration has been from the Atlantic Coast westward. The languages of Northern Spain have a speech of the polysynthetic character which distinguishes the American languages, and has many of the characteristics of the American aborigines." See *American Antiquarian*, Vol. V., pp. 118-121.





SHELL GORGETS, FROM TENNESSEE.





IMPLEMENTS AND ORNAMENTS FROM TENNESSEE.

tery moulded into the shape of animal figures, gorgets, and stone spades are more numerous near St. Louis than they are anywhere north of that point, though this does not really identify the relics with any particular tribe.

It is to be noticed that the relics partake of the material which is most abundant, at least the best specimens in each locality are made out of the material which abounds in the region. There are no such copper axes, spear heads, spuds, spears with sockets, needles, and chisels, as are those found made of copper, which are common in Wisconsin near the copper mines. There are no such pottery vessels as the beautifully-moulded and finely-grained specimens found near the Cahokia Mound. There are no such large burial caskets, made out of clay, as are found among the Stone Graves of the Cumberland; and yet in all these localities there is a great variety of relics, and many of them show an equal proficiency in art, though it is expended on different material. The same distinction may be drawn in reference to the mounds themselves and the earthworks.

The large number of pyramid mounds situated in double lines across the great American bottom, of which the Cahokia Mound is the chief, proves that the people were industrious and well organized. It was necessary to build the mounds large and high to escape the water during the freshets, but the discovery of large numbers of stone spades and hoes and agricultural implements prove that the people cultivated the soil, notwithstanding the malaria which prevailed and the freshets which frequently flooded the region.

The author has discovered conical mounds with pyramid mounds, and a wide platform between them, which so resembled those common in the Gulf States that they conveyed the idea that here was a "chunky yard" similar to those found in the last mentioned locality. It seems very likely that a branch or colony of the Muskogees passed up the Mississippi River and built the Cahokia Mounds, but that they returned to the south long before the days of history. The resemblance of the pipes and pottery and shell gorgets among the Stone Graves and those found in the Cahokia Mound, may be owing to the presence of the same races on the Cumberland River. The same, possibly, may explain the presence of the copper plates in the Stone Grave near the Etowah Mound.

IV. The region which next calls forth our attention is that which was situated on the Cumberland and Tennessee Rivers. This is the region where so many stone graves have been discovered.

The best authority on the relics of the Stone Graves is Gen. G. P. Thruston, whose work, "Antiquities of Tennessee," is of great value; illustrations from which have been borrowed, and they show the character of the relics found here better than words can describe them. The relics present a great variety

of material and form, but all show considerable skill in construction. In fact, the relics found in the Stone Graves are numerous and so varied that one can easily reconstruct the social condition from them and gain a picture of the society which prevailed. The study of these relics is something like the study of the relics and remains found in the ruins of Pompeii, for it brings before us a stage of culture which was unique and peculiar to the locality, and suggestive of a people who had acquired a certain rude skill, and had applied it to every department of life, using the material which was at hand, but had buried voluntarily all the specimens of their skill in the graves. One is inclined to draw a parallel between the people who evidently dwelt here in prehistoric times, and the pioneers who afterwards inhabited the region, for both classes of people seem to have manufactured their own tools



*Chunky Stones from Tennessee.*

secured their own materials with which to make themselves comfortable and carried on their industries without introducing anything from a distance.

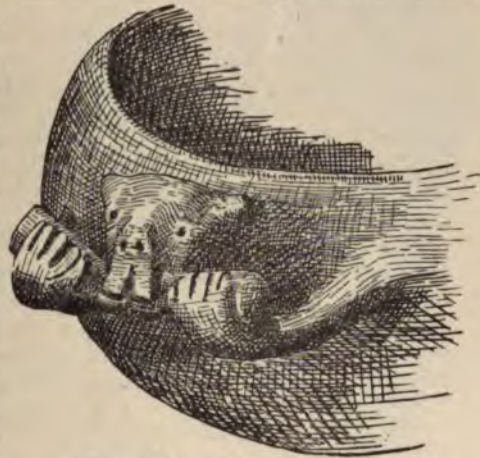
The introduction of gunpowder, the invention of the loom, and the use

of the steel axe gave great advantage to these pioneers; yet when we consider the houses which were erected within the stockade forts, which were plastered on the inside, and remember the scenery and resources of the region, we may well imagine that the difference between savagery and civilization was not so great as some have imagined. It is not often that this comparison is drawn, yet if we take the relics which have been discovered among the Stone Graves, and compare them to those which were used by the pioneers, we will find that there were many points of resemblance, for the same kind of tools, utensils, implements, and weapons are apparent in both, and we are obliged to give the same names to them, notwithstanding the fact that the materials are so different.

Under the head of tools we find knives, axes, chisels, awls, mauls made out of stone, which resemble those made out of



iron; we have such weapons as daggers, spears, dirks, knives, arrows, resembling those made out of steel. Under the head of utensils we find plastering trowels, pottery stamps, paint grinders, mortars for grinding corn, pestles for pounding, made out of stone and bearing the same shape as those made out of iron or wood. Under the head of agricultural implements we have scrapers, hoes, spades, made out of stone, instead of iron; many of the hoes have the same shape. For domestic use we find dishes, cups, spoons, and many other articles made out of shell. We find pots, kettles, bowls, basins, jars, bottles, made out of pottery ware; needles, awls, chisels, instruments for polishing, smoothing and cutting, made out of bone; textile fabrics and skins made into various garments; planting sticks, rude looms, spear handles, as well as bows and arrows, made out of wood. Besides these there were many articles whose use is unknown, but they so much resemble those in common use at the present day, that we give to them names which are familiar and common, such as buttons, spools, pulleys and wheels, ear ornaments, rings, amulets, some of which are made of copper. Even child's rattles and marbles have been found, and many other toys in imitative shapes resembling animals and human figures. These bring the domestic life before us. The social



*Pottery Bowl from Tennessee.*

life is also made apparent by the number of pipes which have been found, some in what might be called "trumpet" shape; tubes, cylinders, monitor pipes, platforms and discs; others have imitative shapes resembling animals, birds with wings spread, as if flying; others with their wings folded; pipes in the shape of ducks being very common. There were also stone pipes in the shape of wild animals, others in the shape of human images with the bowl upon the shoulder, others seated holding large jars in front of them, others in kneeling posture with bowl in the back.

The agricultural and mechanical implements were numerous and were generally made out of stone. Some bear the shape of notched hoes, axes, paddles; others were leaf shaped; others with a square blade, notched in the upper part; spades or shovels similar to those found in the neighborhood of the Cahokia Mound. There were double-barbed spears, notched

swords, sceptres, ceremonial objects carefully flaked, chipped stone hooks and stone claws, flint discs, and stone turtles.

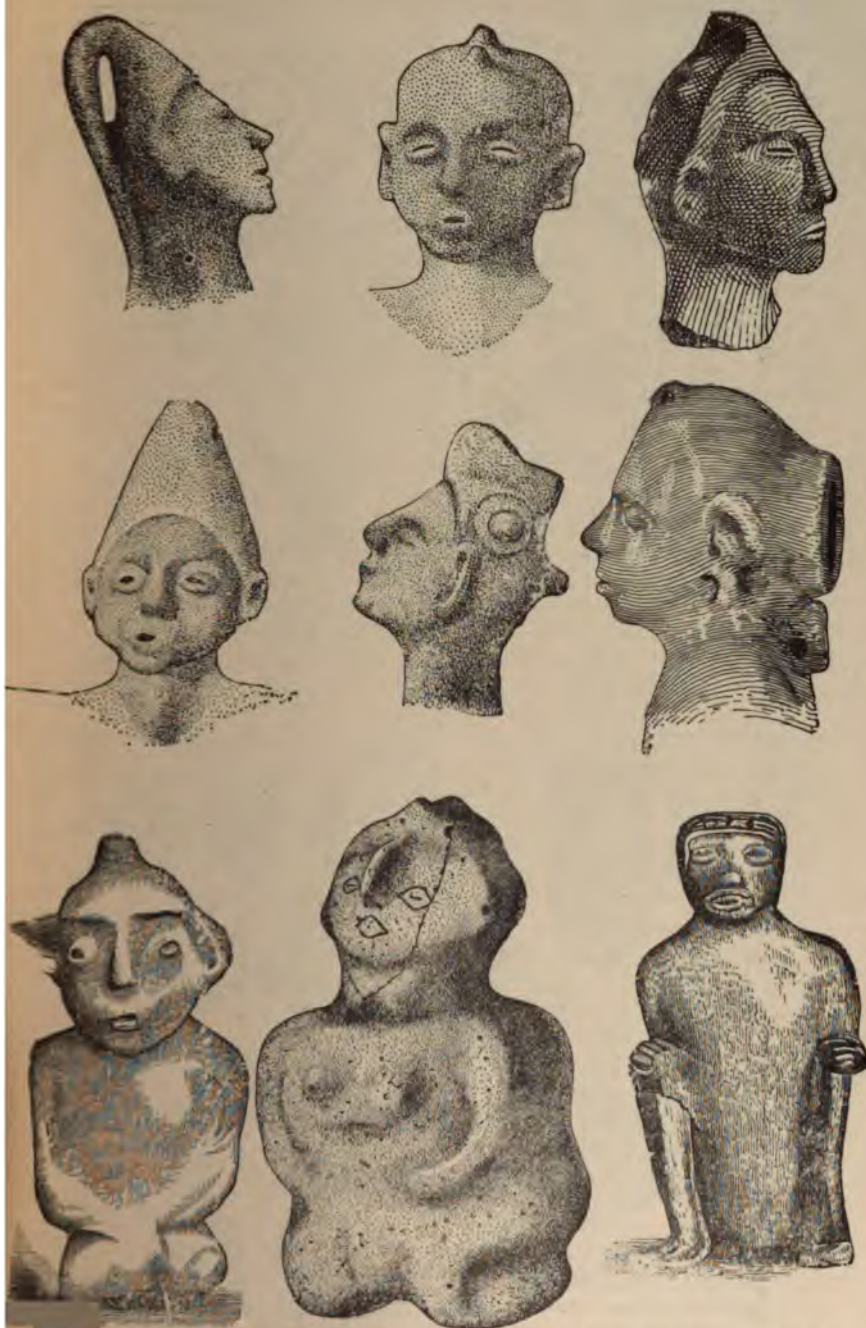
The pottery vessels show much skill in moulding clay into imitative shapes, for we have a great variety of bowls and dishes in the shape of ducks, frogs, fishes, toads, and birds of various kinds; others presenting lizards and animal figures and paws molded into shape, and raised upon the outer surface, or serving as handles upon either side. There are no such finely-carved pipes as are found in Southern Ohio; no such delicate work or pains taken in imitating the feathers and forms of birds, and yet the pottery vessels were wrought into human shapes with such skill that one may easily recognize the features of the people, and imagine a personal semblance that make them appear as portraits. In a few cases the bear and the dog are represented, even the panther and other wild animals, with much skill and taste.

The shell gorgets are the most interesting of all the ornaments found in Tennessee. They represent serpents coiled up so as to make a circle, spiders with legs spread, the whole surrounded by four circles. Shell gorgets with human figures engraved upon them, are very interesting. One such represents two warriors armed with stone knives and stone hooks, who seem to be fighting with one another, but they are clothed in a symbolic manner, as wings extend from the face, claws from the feet, and yet they are clothed in such a way as to represent the style in which the warriors were arrayed, as they have belts about the waist, two sets of bands around the arms and legs, the spool ornament in the ear, a peculiar badge or mace in the hand, the head decorated with a single plume. The wings and tail of the eagle are well represented. They are called the "Eagle Men."

V. The relics of the Gulf States remain to be described. These were first seen and described by Cabeza de Vaca, and the various writers who accompanied De Soto; next by Bartram, the famous botanist and traveller; afterward by Mr. C. C. Jones in his excellent book, "The Antiquities of the Southern Indians"; and still later by Mr. Clarence Moore, Mr. A. E. Douglas, Mr. F. H. Cushing, Mr. A. S. Gatschet, and others.

They may be classified according to the geographical districts in which the various tribes were formerly situated, or according to material used, or the earthworks with which they were associated; but they all present peculiarities which distinguish them from those in the northern districts.

It may be said that there were at the time of the Discovery several different tribes situated in the Southern States,—the Seminoles in Florida, the Creeks in Georgia, the Chicasaws, and Choctaws in Alabama and Mississippi, the Natches in Louisiana, and the Cherokees in eastern Tennessee; the first have been described by Mr. Clarence E. Moore.



PORTRAIT PIPES AND IDOLS FROM THE STONE GRAVES AND GULF STATES.





PIPES AND MACES FROM THE GULF STATES.



POTTERY VASES AND BOTTLES FROM THE GULF STATES.

It would seem from Mr. Moore's account, that the tribes formerly situated in Florida had more and larger pottery vessels than any other, many of them in imitative shapes. The Muskogee tribes had more idols and carved stone relics and shell gorgets; but the tribes situated in both Eastern and Western Tennessee had more shell gorgets and copper plates than any other. Some of these copper plates have been considered by Dr. Thomas as very modern and bearing the touch of the white man, and in one found near the Etowah Mound Dr. Thomas Wilson has recognized the image of Buddha.

Copper relics are quite numerous. The natives that Soto met spoke of copper mines in the mountains of Appalachee, and the whole army was led into the mountain region in hopes of discovering gold.\* In passing through the towns between the coast and the mountains, they found many large towns or villages; in one of which—Talemeco—was a temple with three gates, one of which was guarded by gigantic wooden statues, variously armed with clubs and wooden vases, canoe paddles, copper hatchets, drawn bows, and long pikes which were ornamented with rings of pearl and bands of copper.

The relics which are peculiar to the Gulf States have been described by Mr. C. C. Jones. The most interesting of these consist of pipes, which may be divided into different classes:

1. The idol pipes, which are always associated with the large pyramid mounds, and frequently represent the human figure, upon the knees in an attitude of devotion, clasping an urn-shaped bowl; head thrown back; forehead retreating; eyes upturned. 2. The calumets, among which are the bird-shaped pipes made of serpentine, oolite, feldspar, gneiss, mica, slate and apstone. Some of these are seven inches long, three inches high, and two inches wide; the walls of the bowl half an inch thick. They are generally found in the mounds and in the fields, and may be regarded as the public property of the tribe, the private property of the chiefs and medicine men. The one pipe in the shape of a panther is depicted by General Huston in his book. The panther was the totem emblem of the Creeks or Muskogeas; the wild cat was the totem of the Chickasaws. The discovery of these bird pipes in the Stone mounds is very significant. 3. The common pipes were made of stone and clay, and were generally used with a reed stem; some of them represent the human face.

4. Another class of relics consists of maces or double-bladed axes. Mr. C. C. Jones says:

NOTE.—Mr. James Mooney has made a close study of the route taken by the Spaniards. He maintains that after passing up the Gulf, where they found the forts amid the swamps, they came to the province of Cutifachiqui and, accompanied by the queen, they marched toward the mountains, where they were met by the Cherokees. Crossing the Blue Ridge, they came at the end of a month to the town of Guaxula, where the people came out to meet them dressed in robes of skins, who gave them three hundred dogs for food. They passed down the Chattahoochee, and came to Cauasanga, a frontier town. They marched southward toward the Gulf, passed through Tuscaloosa, and finally reached Mobile.

These ceremonial axes occur frequently in the relic beds along the banks of the rivers where the natives congregate for fishing. The most of them are broken. Their edges are not sharp. Fashioned principally of a talcose slate, they were unfit for service, and must be regarded as ornamental or ceremonial axes. They vary in size and form, the most of them being less than six inches in length and very light. Three of them were found in a grave mound in Louisiana, made of quartz; marvels of symmetry, and polished to the highest degree; evidently intended for ornaments or badges of distinction. One, made of diorite beautifully polished, is four inches long and an inch and three-eighths in diameter (Fig. 4). Another, made of syenite (Fig. 5), measures four inches in length and two and three quarters in width, weighing twenty-seven ounces. In another (Fig. 2), the drill hole had not been completed. Another (Fig. 3) is wing-shaped, and is made with points around it, but not brought to a cutting edge, made of slate. Another is made of close grained diorite, beautifully polished, four inches long. This was an ornamental or ceremonial axe, intended for display, and not for use. (See Plate.)

5. Another class of relics consists of chisels and gouges. Of these Mr. C. C. Jones says:

They are made of green stones in sockets of wood, and stag's horns of bone, similar to those found in the Lake Dwellings of Switzerland. The gouge differs from the chisel in that it is larger and stronger, having one side scooped out and the other rounded. Bone gouges are made of the leg bones of the deer and buffalo. These were obtained from mounds, shell heaps and relic beds gathered upon the sites of ancient villages and fishing resorts, or plowed up in cultivated fields.

The discoidal stones are common in the Gulf States. They are all circular in shape, with diameters varying from one to six inches. Many are flat on the sides, slightly convex, hollowed out on both sides. The cavities are circular and four inches in diameter. One has four cavities, two on each side, precisely similar and one within the other; the depth of the outer, five-eighths of an inch, and the inner, three-eighths of an inch; the rim one-quarter of inch thick. The general distribution of the stones shows that the game was in common esteem among the various Georgia tribes.

6. The pottery of the southern Indians is superior to that manufactured by the northern tribes. In some of the Southern States, kilns in which the ancient pottery was baked are now to be met with. In the Etowah Valley kilns constructed of water-worn stones have been discovered. One of the best specimens of burial urns (Fig. 1, Pl. XXVII.), 15½ inches in height and nine inches in diameter, contained the bones of a young child. The urn taken from an earth mound near Sparta (Fig. 2), is 14 inches high, 14 inches in diameter, and has the pattern of wicker work. A numerous class of flat-bottomed jars are represented by Figs. 3 and 4. Figs. 5, 6, 7 and 8 represent pots with ears and legs; while in Figs. 1 and 2 next Plate, we find the wide-necked jars; and in Figs. 3, 4, 5, 6, 7, 8, 9 and 10 bottles taken from the Grave Mounds.



## EDITORIAL NOTES.

**PROF. PUTNAM AND THE DREXEL MEDAL.** The award by the Provost of the University of Pennsylvania, of one of the first Drexel Gold Medals to Prof. F. W. Putnam, is a deserved recognition of his work on American Archaeology. The three other medals were awarded to: Prof. Petrie, for work in Asia Minor; to Prof. Evans, for his excavations in Crete, and to Prof. Heilprecht, for his excavations in Babylonia. Prof. Putnam has been since 1895 at the head of the Museum in New York, as well as the Peabody Museum at Cambridge, Mass. It is at Cambridge that the sacred objects of the tribe of the Omahas, which were collected by Miss Alice Fletcher, are on exhibition; also the collection of Zuni relics collected by the Heminway Expedition, the splendid relics and casts from Copan in Honduras, the so-called "paleolithic" relics from the valley of the Trenton, the aboriginal relics from New England, the models of aboriginal dwellings, the Calaveras skull, relics from the Stone Graves and many other localities. The editor of *THE AMERICAN ANTIQUARIAN* sends his congratulations on the honor thus conferred.

**OLD EXAMPLES OF BASKETRY** from California, Arizona, Puget Sound, Washington, and Oregon; baskets from Pimas, Apaches, Utes and Navajos; pottery vessels from Florida; the ethnological collection from the Maldine Island, the gift of Dr. Alexander Agassiz, should be mentioned in this connection.

**WAS PRIMITIVE MAN A SAVAGE?** An article by Talcott Williams in the Annual Smithsonian Report for 1896, claims that primitive man was a savage, and holds that the relics of paleolithic man point to his wandering over various parts of the globe. Mr. Frederick G. Wright, in a recent article in *The Record-Herald* in Chicago, takes the other side of the question, holding that primitive man in Egypt began with a high civilization, and degenerated. The discovery of the pre-dynastic race, buried in graves with pottery vessels around them in a circle, proves that earlier man in Egypt was inferior to the race that followed.

**JOSEPH PRESTWICH** was associated with the discoveries of Boucher de Perthes in 1847. He was awarded a medal by the Society in 1865.

**MR. F. C. PENROSE**, architect and archaeologist, died recently at the age of eighty-five. He was associated with Norman Lockyer, and gave much attention to the orientation of temples. He was a fine scholar and excellent observer. He was careful in drawing his conclusions, and has made his mark upon the archaeology of the period.

**ANCIENT PERUVIAN ART.** A few years ago Dodd, Mead & Co., published a sumptuous book, entitled "The Cemeteries at Ancon," in which were illustrations of the textile fabrics of ancient Peruvians. The same firm has recently published in company with Asher & Co., of Berlin, Germany, "Ancient Peruvian Art"; or, "Contributions to the Archaeology of the Ancient Incas," in which the pottery of Peru is splendidly illustrated, the specimens being in the possession of Arthur Brasser; the letter-press translated by A. H. Keene. It is a very valuable contribution to the archaeology of Peru.

**"THE ARGIVE HERFUM"** by Charles Waldstern, published by Houghton & Mifflin, is an interesting book. Argos subdued the other cities of the district, such as Mycenæ; Tyrins and Medea, at an early date, and became a political center. Pausanias claims that Mycenæ was destroyed about 480 B. C., but the ruins contain no coins, no inscriptions, and no writing, and the conclusion is that it was destroyed before this date. Arthur Evans has found clay tablets in Crete, showing that writing was common at an early date.

**TUNIS.** Excavations in Tunis have laid bare Roman remains of much interest.

**THE LION OF CHERONEA.** This monument, erected in honor of those who fell in the battle of Athens and Thebes against Philip of Macedon, to be restored by the Greek Government.

**GEZER** has a continuous history from pre-Israelite times. Its site has been recently explored by Clermont Ganneau, who has discovered a bi-lingual inscription in Hebrew and Greek.

**ARBOR-LOW** and other stone circles have been recently explored. No Roman relics and no bronze relics were discovered, and yet the triliths were wanting, probably having been used in lime burning.

**BAALBECK.** The work of exploring this temple, under the patronage of the German Emperor, is nearly completed. In the center of the whole is a great rock altar—rock hewn—but the later buildings are constructed in the Roman style; a magnificent colonnade being the chief object.

**EDUCATION** for March contains an article on "Ancient Salem," illustrated; also "Some Relations of American Art to American Life," by Prof. Frank Sawvel. This is one of the best of our exchanges. It has reached its twenty-third volume, and is only two years younger than THE AMERICAN ANTIQUARIAN.

**THE ANTIQUITY OF WRITING** is known from the study of the Rosetta Stone, which was deciphered by Champollion in 1830; second, from the interpretation of the Behistun Inscription by General Rawlinson in 1850; third, from the Moabite Stone; fourth, by the Tel el Amarna Tablets, deciphered by Prof. A. H. Sayce and others; fifth, from the Minean Inscriptions, interpreted by Mr. Glazier, and sixth, from the discoveries made by the Babylonian Expedition of the cuneiform inscriptions, which have been deciphered by Prof. Heilprecht, Prof. Robert Harper, and others.

**THE ALPHABETS** were all derived from picture writing, but appeared in separate centers. In Egypt very early; also in Phœnicia and Crete. Two-thirds of the Phœnician pictorial types are found in the palace of Knossos at Crete, and not one has been identified in Egypt. The Mastabah of Pta Hotep contains 400 hieroglyphs; but not one resembling the Phœnician alphabet. The cuneiform goes back to the reign of Ur Gur, and earlier, when pictographs appear. The Minean alphabet, studied by Glazier, in the wilderness west of the Tigris, is between the Phœnician and the cuneiform. The Chinese writing is pictographic and syllabic, but had a distinct origin. Many writers hold that the Chinese language came from the Accadian, which preceded the Semitic. The Chinese may have separated and migrated before the alphabet was invented. The cuneiform alphabet opens the door to the literature of the Medes, the Persians, the Babylonians, the Assyrians, the Elamites, and old Accadians, which go back respectively to the following dates: 700 B. C., 1200 B. C., 2200 B. C., 3800 B. C., and 4500 B. C. The Deluge tablets and the Creation records were discovered by George Smith. The seals which treat of the conflict of Marduk and Tiamat were secured by the Wolfe Expedition, and have been interpreted by Dr. Ward. The tablets that give the myths of the earliest period were discovered by the Babylonian Expedition.

**THE ANTIQUITY OF LITERATURE.** The discovery of these cuneiform tablets revealed the fact that libraries were in existence as early as 3500 B. C., and continued up to the time of Alexander the Great, when the great library at Alexandria was burned. These libraries were devoted to religious subjects, commercial affairs, and the interests of government; but the poetry and the literature of the ancient times resembled that of more recent times in the Middle Ages, when the Minne-singers were the means of making known the mythologies which prevailed. Homer was the great poet, and is supposed to have recited his poems, for it is unknown whether he wrote it out or repeated it so often that others wrote it from memory.

The sacred literature of the Bible may have been at the first, preserved in the same way as a matter of tradition, rather than of manuscript or



libraries, the probability is that the Ten Commandments were actually engrossed on stone. The "Song of Miriam" was probably preserved in the memory of the people. The story of Joseph and of Moses, as well as the Exodus and other events recorded in the Bible, was undoubtedly preserved in the memory of the people, though there is good reason for believing that it was committed to writing, as writing was practiced by the Egyptian, a thousand years and more before the days of Moses. There are certain analogies between the story of Joseph and a certain Egyptian story of the two brothers, but this is just as likely to have been borrowed from the Hebrews, rather than the Hebrew story from the Egyptian.

WRITING AND LITERATURE IN AMERICA. The analogies between the method of communicating thought and preserving traditions in America and those common among the primitive nations of the East, are worthy of notice. In America this work was always accomplished by the medicine men, by the priests, and the few who were especially trained for it. There were also sacred mysteries in America, as well as in Greece; and in these mysteries the religious life of the people was kept alive. The tradition and the history were also preserved by means of these sacred mysteries. The *Mjda* Songs of the Ojibwas are well known. The *Megis*, or "medicine bag," was as sacred as the Ark was to the Israelites, or the "mysteries" were to the Greeks, or the *mithra* rites were to the Persians. With the Persians there was a perversion. The chief ceremony consisted in the slaying of the ox and the shedding of his blood, but there was no sense of sin, or purification for sin; whereas in the mysteries of the Ojibwas there was an entire absence of such a rite, but the work of purifying and preparing the person to enter the sacred lodge and to tread the path of the soul, was by receiving the supernatural gifts, rather than by the external sacrifices. In the ceremonies of the Haidas, the same system prevails. Sickness is caused by an evil spirit, which must be expelled, and a new life must be imparted from the supernatural powers.

ANCIENT HOUSES OF THE MEXICANS were described by Pomar in the year 1583. The form of the construction is low, with no upper story whatever; some of them are built of stone and lime; others, of stone and clay. The covering is of beams. Most of them enclose a court, around which are the rooms which they require; the dormitories and reception room of the men on one side, the women on the other. The houses of the principal men or chiefs are so large and have such massive woodwork, that it seems almost impossible that human strength and industry could have put it in place. More than one thousand men might be lodged in them. They stand on platforms, the lowest of which are one fathom high; the highest, five or six. The largest halls are twenty-five fathoms long, and as many wide. They are square, and in the middle have many wooden pillars on blocks of stone, and on these the rest of the woodwork is supported. The rooms have no outer doors, only doorways with wooden pillars. The tenure of lands was communal. The lots were held in possession, and not by actual ownership. The male descendants alone have a share in the cultivatable land. The fields were small. Aboriginal agriculture was limited to but few objects—maize, cotton, cochineal, beans, pepper, and the magive.

STATUARY IN MEXICO. There are indications to the effect that statuary made for worship was always composite: that is, the central figure was surrounded by forms, denoting attributes, so as to give a confused, almost nondescript appearance, of which the great idol of Huitzilopochtli is an example. The Chac-mool is a case in point: this is a reclining figure, made of limestone, and was exhumed at Chichen-Itza by Dr. Le Plongeon; a second statue of black volcanic rock was found at Tlascala, and a third at Tacubaya. A fourth, which is a torso, was found in the State of Puebla, near Popocatepetl. Sculptured statues have been found in the West Indies, which are symbolic and represent the Island divinities. These are lying on the ground, with the head and feet partly raised, and have what appears to be the representation of a mountain peak resting upon the back. They are very singular in shape, contrasting with those just described.



THE PHœNICIAN was the only nation of the Canaanites which continued to occupy a conspicuous place in the history of art. Nearly all the tribes of the interior remained in their condition as agriculturalists and nomads. The only tribe that succeeded in founding a State was the Khita, or Hittites, who settled in northern Syria about 1600 B. C. The Phœnician goddess was Astarte. At least she had a more real personality than any other. She was the Istar of Mesopotamia. She was identified with the moon, and was the same as the chief goddess of the Greeks, Venus. Astarte was the personification of nature. She presided over a never-ending process of creation and destruction. As in Egypt and Chaldæa, the spectacle of an original world in which all life sprang from the union of the sexes, suggested the thought that the same condition existed in the divine world; every god had a goddess. The same belief existed in Central America. There, a goddess presided over agriculture and child-birth, and was represented as holding a child in her arms. She was the Astarte of the Mayas, and was worshipped in the same way. It is unknown whether she was identified with the moon, yet there are symbols which suggest the thought. The sun-god was represented as a face suspended to a cross, which was seen in the rear of the shrine at Palenque.

THE HELLENIC CALENDAR. Each Hellenic State had a calendar of its own. The Sothic Circle began the Era of 2280 B. C. and continued for 1,460 years, but a Sothic month was 120 years. The number four was as sacred in Greece as in America. There were four pillars of Heaven; four chief gods over four elements: Zeus over the air, Poseidon over the water, Persephone over the earth, and Pluto over fire. In the astronomical myths the gods of many nations are connected with the signs of the Zodiac; the planets do not come into the mythology, but the names of the constellations come from the Greek. The symbolism of color dates back to the time of Ramses II., and is referred to in Greek mythology. The universe is in three stories: the Heavens above is the abode of the gods; the Earth, the abode of the living; Hades below is the abode of the spirit of the dead. In America it is the same, except that the ancestors were living in caves below the earth, and came up through four successive stages.

THE TEMPLE OF ON, OR HELIOPOLIS, existed before the time of Menes and the pyramid builders. The various worshipers of Thebes were depicted in the orientation of the walls. The orientation of the obelisks shows that the temple of which they formed a part, may have been the first of a series of temples which included those of Thebes and Abydos, and were stellar temples. The stellar were later than the solar, as solstitial worship was later than the equinoctial. The pyramid builders came from a land where the worship was equinoctial, for they are oriented east and west, though the early pyramids are like Ziggurats.

ASSYRIAN GIRLS covered with jewels, dressed in rich stuffs with bright colored fringes, their black and glossy tresses held with scarfs of brilliant colors, mingled with flowers and blossoms; eyes that glissened under long eyelashes, beneath the arch of dark eyebrows; the freshness of their red lips; necklaces of gold hanging between the breasts, was an interesting scene to the Oriental devotee; but the same scenes were common in Central America, when the priest kings were in the ascendancy and the people were subject to their authority.

BIRS NIMRUD on the west bank of the Euphrates below Babylonian marks the site of an ancient city. Kirjath Sepher (book town) was destroyed by the Israelites, but was in existence long before the Exodus, and Gaza or Gath, and Tyre are mentioned in the Tel el Amarna tablets, and are marked by heaps of earth. The sacred sites of the Hebrews are not easily identified, but other mounds give hints as to their locality.

THE ANCIENT CITIES OF EUROPE are on the very sites which were occupied during the Stone Age, and frequently pile structures and megalithic monuments and crannogs are found which illustrate a neolithic stage of culture. Arrow-heads, spear-heads, bone implements and needles are found among the Mendip Hills.

## BOOK REVIEWS.

**M**EMOIRS OF THE PEABODY MUSEUM OF AMERICAN ARCHÆOLOGY AND ETHNOLOGY. Harvard University. Vol. II., No. 2. Researches in the Central Portion of the Usumatsintla Valley; Reports of Exploration for the Museum, Part Second, by Teobert Maler. Cambridge: Published by the Museum, 1903.

This Report is very interesting and valuable, in fact the most so of any that have been issued by the Museum. Mr. Maler is indefatigable in his work. He has made his residence for some time in the region where ancient cities are most numerous, but are hidden in the forests and remote from public thoroughfares. He does not dig up or take away relics, so continues his work without molestation from the authorities, who are quite jealous for fear their relics will be taken away.

The discoveries which have been made in this way rival those made by Stephens and Catherwood fifty years ago, but do not excite so much attention of the public as theirs did. We are, however, coming to appreciate the art and architecture of this region as never before. It is amazing that a people, who have been described as in the middle status of barbarism, and as living in the communistic state, and having no property in severalty, and resembling in these respects the Pueblo Indians, should prove to have built up such wonderful structures as are represented in these photographs. The arts may have been developed on the spot, and the architecture may have sprung from a social condition different from our own; for there is no trace whatever of contact with other countries, and yet there is nothing in Babylonia or Egypt which is superior to the works presenting the details of the costumes, head-dresses and jewels, and the hieroglyphics than may be seen in these figures. The stone is rather coarse grained sandstone, easily worked, and does not admit of any polish; yet the figures are brought out in a great variety of attitudes, and are true to life. Even the expression of the face is given and the texture of the cloth. If one should judge from the figures engraved upon the lintels and upon the stelæ, he must conclude that the rulers arrayed themselves in the most gorgeous apparel, for the feathers, jewels, fringes, maxtli, tassels, and girdle, form a mass which surrounds and covers the body, so as to make it difficult to find the face at times. Yet the limbs are brought out in relief, and the attitudes are natural and life-like.

It is a study not quite equal to that required in making out the figures in the Boston Library, but it takes much time to trace out the different parts of each costume and to see what the significance of each part is.

It appears that smaller cities display architectural development the same as the larger. In these cities there were temples in which the lintels were sculptured with the greatest variety of figures. There were hieroglyphic stairways; palaces with chambers and sculptured lintels; labyrinths with quadrangles and interior passages; many temples; a great acropolis, crowning the mountain ridge; sepulchral pyramids; temples with stelæ, up nineteen or twenty in number; sacrificial stones; in all fifty-one structures, forty-two temples, forty-four lintels, besides the labyrinth, and over twenty stelæ. These are represented by forty-six plates and forty-one figures, besides those contained in Part I., and are described in letter-press embracing 134 pages.

The Memoir shows the thorough work that the Peabody Museum is accomplishing, and reflects great credit on Prof. Putnam and the trustees of the University. There is nothing that compares with it, although the sumptuous volumes prepared by Mr. Maudslay present the ruins which are already well known in a very attractive form.



DECORATIVE SYMBOLISM OF THE ARAPAHO. By A. L. Kroeber. Reprinted from the American Anthropologist. Vol. III. April June, 1901.

This pamphlet, which is the paper offered for the degree of Ph. D. from Columbia University, is very interesting, and on an interesting and suggestive subject, and may be regarded, perhaps, as a specimen of original research, though it contains both fact and fancy. The remarkable art of the Pacific Coast, from the northwest to the southwest, demands more study than it has received, for there is more conventionalized art there of a primeval sort than can be found anywhere else on the globe. The author has only touched upon the borders of the subject.

Ethnic phenomena do not exist separately. The causative forces of the human mind cannot be isolated. The technique of art may be so magnified as to be in fragments, and the spirit and the life so deep that mere technique cannot apprehend them. There is no doubt that the history of writing came through the process of making natural objects into conventional symbols, as the author states, and then by a process making these to suggest and convey ideas. The only difficulty is that no one has been able to trace the process through its different stages.

The writer of this review has long held that there was a symbolism which extended from Behring Straits to the Isthmus of Panama, disconnected and in fragments; yet by comparing them and studying the process of growth of the alphabet in other lands, one might reach the key which would unlock the mystery of the glyphs of the Southwest. The pamphlet is, therefore, very welcome as one of the lines which must be followed before their study will be successful. All speculation which is based upon a narrow field of study and observation will prove vain. Primitive races of America possess so many original ornamentations and symbols, that they must be studied, and America must be the field.

Baron Stolpe has been following up the subject of decorative art; others have studied up the subject of comparative symbolism, but the work has just begun. The danger is in narrowing the sphere of study and wandering into speculation; but thorough scholarship and wide observation will bring results.

The calendar system of Central America may have had a distinct and separate origin, but even this needs to be studied by the comparative method. The narrowing process of the specialists is an evil as well as a virtue, for it shuts out the light which comes from other spheres; the microscope and the telescope are both useful, so oriental as well as occidental realms are to be studied together.

RUINED TEMPLES DISCOVERED IN TURKESTAN IN 1901. By M. A. Stein. The Preliminary Report of an Archaeological and Topographical Expedition in Chinese Turkestan by the Author. London: Eyre & Spottiswood, 1901.

Colossal statues in stucco, stucco bas reliefs, manuscripts of the fifth and sixth century in sanskrit were found not far from Kashgar; fourteen temples, ruined stupas, dwelling houses, and monastic dwellings were discovered; household articles, canals, fences, documents on wooden tablets, rolls of paper with Tibetan writing were discovered; a ruined quadrangle, 235 feet square, at Rowak, and a stupa court with reliefs in stucco, representing personages, male and female; colossal statues with lofty head-dresses and thin drapery, which brought into relief the limbs and forms, showing Greco-Buddhist art, which had probably been introduced from India, were also discovered. These are important finds, as they show how early the mountains of Tibet and the interior of Asia had been penetrated.





MOUNT STEPHEN—CANADIAN ROCKIES.



THE KICKING HORSE CANYON—CANADIAN ROCKIES.



GREAT GLACIER OF THE SELKIRK.



THE BAMFF IN CANADIAN NATIONAL PARK.

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THE DECREASE OF THE INDIANS.

BY REV. M. EELLS, D. D.

Three questions have been asked me in regard to the Indians of Puget Sound. They are these: (1) Are these Indians increasing or diminishing? (2) If diminishing, what are the causes? (3) Does missionary work have anything to do with it; or, would they be better off without Christian influences, their old religion being the best for them?

1. Are these Indians increasing or diminishing? The answer is very decidedly, they are diminishing. In 1880 a very accurate census of the Twana tribe on Puget Sound, made in connection with the United States decennial census of that year, in the taking of which the writer assisted, made the number 240. They now number 170. These Indians are said by E. Eells, United States Indian Agent over them for nearly twenty-four years, to hold their own in regard to population better than most tribes on Puget Sound, because they are more isolated from the large number of the whites than the other tribes. It has been quite difficult to obtain an accurate census of the different tribes during different years, so as to make a satisfactory comparison, although a census of some kind has been taken often enough. The earliest one on record of all the tribes on Puget Sound was made by George Gibbs in 1854-5, when the treaties were made with them. His number was 6,374. In 1861 the government report was 10,048; in 1871, 5,985; in 1901, 3,468. It is probable that the report of 1854-5 was too small, as it was taken when the treaties were made, and some Indians may not have been present, or even included in it, though the great share of them were. The census of 1861, was probably too high. It was taken in connection with the first distribution of annuity goods, after the treaties were confirmed. There were three treaties, to which all the Indians were subject, but some of them lived near together. A good number, according to reports, who did not belong to the tribes included in a treaty, went however to the distribution of goods under it, as they were acquainted and related to those Indians,



and were counted with them, the agent not being able to distinguish them from those properly under him. The reverse was true when at another place there was a distribution under another agent. Some years, agents have counted all who belonged to the tribes, and some years only those on the reservations under them. Hence figures vary very much from year to year. Still, it is very plain that the Indians on and near Puget Sound have decreased immensely within forty or forty-five years; since they came in contact with American civilization.

What are the causes of this decrease, is a question often asked. Is civilization or Christianity to blame? In the opinion of the writer, neither the real civilization or real missionary work is to blame. It has been a real help to the preservation of the race, but the vices of civilization and a half civilization are plain causes of this decrease.

(1) The vices of civilization. When some of the earliest missionaries came to Oregon in 1838, they met Dr. Lyman Beecher at Cincinnati. He said to them, in a rough way, about as follows: "Go on and do the present generation of Indians all the good you can, and get as many to heaven as possible, for you will be the means of sending the next generation all to hell." What he meant was that by the time the next generation of Indians should come on to the stage of life, other whites would follow, and that the class of whites with whom the Indians would naturally associate would carry such vices that many of them would die. This has been largely true, both in regard to intemperance and licentiousness, though not so much so in regard to the latter as farther north in Alaska. Still, scrofulous diseases have thus been introduced, by means of which many have slowly died. But intemperance has carried off its hundreds.

Lord Jim Balch was for a long time the head chief of the Clallam tribe, and a very terror to the liquor drinkers in it. He once said that two or three saloons at Dungeness had been the means of the death of five hundred Clallam Indians. This was undoubtedly an exaggeration. Still, there is much of truth in it. Among some tribes, especially on the east side of the Sound, there are comparatively few men who do not drink much, too much, and many of the women do likewise.

(2) Half civilization has also taken off its hundreds, or thousands, both through its clothing and housekeeping. It did not take the Indians long to wish to get rid of their old style clothes of grass, bark and skins, and to obtain those of the whites. But on Puget Sound it rains generally from forty to a hundred inches a year. Indians unable to read will not stay in their houses all the time it rains, and do little or nothing. They will go visiting, hunting, fishing, or somewhere. Half-civilized in regard to the laws of health, or too careless sometimes, when they do know these laws, they will go with wet clothes, and especially wet feet, until consumption and rheu-

matism have carried off very many, especially of the older ones. Under the old régime, when they went barefoot, there was comparatively little danger because of wet feet, and even their old style clothes could be easily thrown off, when they wore any. So the half-civilization of clothing has slain its hundreds.

The same is true of their housekeeping. They have been urged to get off of the ground, and out of the smoke as it was in their old houses, and build good ones. The great share have done so. But a good house supposes good housekeeping, with decent neatness. There are, however, three preventatives to this: one is ignorance, especially among the very old; another is a certain amount of laziness with some who have been trained in the boarding-schools, and the other is the influence of the older on the younger ones. Many younger ones learn how to keep house, leave school with a determination to keep house neatly. The house is well fixed up for them, painted or whitewashed outside, and papered inside, with modern conveniences for common housekeeping. Soon their parents, uncles, aunts, and other relations and friends come in, and remain a longer or shorter length of time, for it is much more comfortable than in their old houses. They litter up the floor, spit on it, drop grease on it, tear the wall paper, and the like. When remonstrated with for it, there is a little scene, and the old folks say: "Your education and civilization are a splendid thing for you, when they make you so above your parents and relatives that you cannot treat them politely. Religion is a pretty thing, isn't it, when it leads you to treat us so." So with all their honest efforts they are between two fires, and it is a hard place for them. Some get discouraged and fall back into the old ways.

Because of all these reasons: the dirt and grease on the floor; the sinks, if they have any, get foul, the dish-water, fish heads, and the like, are around the house, and the air is poisoned. But all like warmth; so in winter a good fire is built, and the foul smells grow worse. The little ones become sick, for they cannot stand the poisonous air so well as the older ones, who are really stronger and also go out-doors more, where they get fresh air. So the little ones become sick. Instead then of moving them to some room where they can have pure fresh air, and at the same time be warm and comfortable, they are kept in the same room where the rest of the Indians are, while the fire is kept up night, as well as day, and made a little warmer; and the little ones waste away. Physicians have examined them and could find no disease; only they were being slowly poisoned to death. So the little ones go. When there was a boarding-school on the Skokomish reservation (which was abolished in 1896), it was found that if the children could only be kept alive until they were of school age, the chances were many times so much more that they would live,

as before, for the deaths were several times as many between the ages of birth and six or seven, as after that. Under the old style of living, when their houses were cheaply built, and the floor was the ground, when grease was spilled the earth drank it up, and if the houses became too filthy, it did not cost much to take them down and move them a few rods, but it costs too much to move good houses in this way.

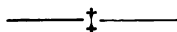
During some years, too, the measles and whooping cough, and similar diseases, have been among them, and their want of knowledge of how to properly care for them, together with their method of curing the sick by means of Indian doctors and cold water on the sick, has been the means of killing many. Hence there are many houses without a child in them. I have no means of knowing the exact condition all over the Sound, but on the Skokomish reservation there are fifty-two families, and in twenty of these there is not a child. A few of them never had any, but most of them had some, and several had from five to thirteen, but they are all dead.

The great question now arises, who or what is to blame for these deaths. Civilization and missionary work have been said to be the cause. But almost on the very face of it, it can be easily seen that it is not true. As a general thing the government has been very good to the Indians on Puget Sound. While there have been a few poor employees, the great majority of them have not been such. These employees have been earnest in trying to improve the condition of the Indians. They have punished them for drinking, and the whites for selling them liquor. The missionary has added his moral suasion to help forward the same object. So they cannot be to blame. The same has been true in regard to neatness, health and house-keeping. Physicians have tried to give them medicines, only to have them thrown away, because they did not cure in a day or two. They have tried to teach them the laws of health, and have been almost ready at times to compel the Indians to clean up the filth in and around their houses. School teachers have taught the children how to keep house, only to have the natural laziness in a few cases, and the influence of the older ones in many more, counteract it. The missionary has added his influence in the same direction, only to be found fault with for it. So they are not, at all, to blame. They have done their best to keep the Indians alive.

Two causes are evidently the foundation of it, which are very hard to overcome. One is the inevitable contact of the Indians with the whites. Neither the missionary or civilization is the cause of this. As long as white people want their original lands and live near them, there is bound to be contact between Indians and worthless whites, with the inevitable consequences heretofore mentioned. The other is that "a little learning is a dangerous thing"; that the half-educated persons, whether white or colored, often think they know more than



those who really know several times as much, for it takes a good deal of knowledge to know how little we know. A young man was educated in our reservation school until he had finished its curriculum. He then went into the store of a white man, where he was clerk and salesman for two years. Next he went to the high school of the American Missionary Association at Santee, Nebraska, where he remained until he graduated. When he returned home, I asked him what he wanted to do. His reply was that he would like to go to Stanford University in California, and go through its course. I said to him, "You are just beginning to find out how much there is you do not know, are you not?" He look at me a moment, a little oddly, as if it were a new idea to him, and then replied, "Yes, I am." But the great majority of the Indians have not learned near as much as this, and many of them think they know more than their teachers in regard to education, the laws of health, and even religion. To teach them this requires time and patience, but if they can learn this and then obtain a heart that is willing to follow these teachings, there is hope for the race. The question is, will they do so before they are all gone?



#### ARCHÆOLOGICAL RELICS FROM THE LAND OF THE TOTEM.

Many wooden boxes for household purposes are common on the Northwest coast, while carvings on boxes and other objects in slate, as well as on ivory and bone, are numerous, showing in various well-cut figures the totemic idea of the savage mind. On both wood and slate—the latter finely polished—the bear makes a frequent and prominent figure, for he is a great totem; and some quaint Indian stories are told of him. One of these—illustrated in a carving in slate representing a mother and child resting upon a pedestal—is the story of the "Bear Mother," which tells of a party of Indian squaws, who, while gathering berries in the woods, ridiculed the whole bear family. The bears, angered at this, descended upon the squaws and destroyed them all, except the chief's daughter, whom the bear king made his wife. From this union a child was born—being half human and half bear—which was the cause of much suffering to its mother while being brought up.

After the latter had been lost for a long time a party of bear hunters found her. When this happened she was up a tree, and came near being killed by the hunters, who at first thought she was an animal. They took her home, and she became the progenitor of all those who belonged to the bear totem. The agony of the "bear mother," and the sharp claws of the half-human cub lacerating the flesh of its mother while extracting its lacteal sustenance, are faithfully carried out in the slate sculpture representing this mythical tale.

A number of curiously carved pipes and silver, brass and wooden bracelets, are part of the coast Indian exhibit, and near these are a great variety of household, ceremonial and other articles, arranged to give an idea of the different objects given away at the potlatch, or gift festivals. Here are seen dishes, bowls, knives, spoons, pots, spears, kettles, blankets, robes, garments, etc. The potlatch gift includes almost everything portable within the Indian's means.

The festivals are given upon various occasions — such as when a man becomes a chief; when he desires to take a wife; to build a house; to atone for an injury done; to resent an insult, and for numerous other reasons. The occasion gives the householder an opportunity to get, by presents, standing and influence in the village, and in this endeavor he distributes his goods where they will have the strongest "pull."

The potlatch is different from the old-time "cat suppers" of the southern negroes, to which each attendant brought the best food procurable, that all might taste something from a different larder—a larder often further from their pockets than from their hands, a fact which had much to do with the name "cat supper." But as with the negro, the Indians make their gift-festival gatherings the occasion for feasting, dancing and much hilarity. It is said that Alaska's fair aboriginal daughters would spend months in the towns gathering precious potlatch material, so that a "rousing" gift "blow-out" could be enjoyed upon arriving at their native haunts.



BOW, ARROWS AND MASKS CARVED  
FROM WOOD.

## RUINED CITIES IN PERU.

BY STEPHEN D. PEET.

The ruined cities of Peru remain to be described, but before doing so it may be well to study the geographical features of the country.

The mountain region of South America extends from the equator southward for more than 1,000 miles. The Andes have a width of over fifty miles, and consist of three chains, the eastern, the central and the western. The sierra region is between the central and the eastern, and varies from fifty to one hundred miles in width. Some of the mountains rise to a great height. Chimborazo is 21,424 feet high. Mr. Markham says:

The region comprised in the Empire of the Incas was bounded on the east by the Amazonian valley, in the dense forests of which, as well as in the boundless prairies, only wandering tribes of hunters and fishers are to be seen. It is only on the lofty plateau of the Andes, where these extensive valleys, adapted for tillage, and in the temperate valley of the western coast, that we find natives advanced in civilization.

One strong proof of the great antiquity of Peruvian civilization is found in the plants which were brought under cultivation, such as the maize and the potato, and especially in the domestication of such animals as the llama and alpaca. Many centuries must have elapsed before these wild creatures, with the habits of the chamois, could have been converted into the Peruvian sheep.

The vegetation in the sierras varies. In the deep gorges tropical vegetation abounds; in the valleys, the products of Italy and Spain; in the more elevated plains, the crops of northern Europe appear. Higher up in the mountains are alpine pasture lands. The strip between the Andes and the coast is twenty miles wide. In this there are certain cities which are well known to history, and among them some well-known ruins. The central strip is the highest but contains more ruins than any other. Here was the famous city of Cuzco, which was 11,380 feet above the sea. The basin of Lake Titicaca is in the southern part of the Andes. This also contains many ruined cities. The lake itself is eighty miles long, and forty miles wide; the basin is over 300 miles long by 100 miles wide. On the southern side of Lake Titicaca are the ruins which have been called Tiahuanaco. The coast region is divided into six sections, and contains ruins which differ from one another and from those of the Alpine regions. These ancient cities indicate that the population which brought in the new civilization into Peru, came in by way of the sea.

The ruins scattered over Peru give evidence of having been erected at different periods, but the earliest date from remote ages. Mr. Clement C. Markham says that five distinct styles may be traced, each representing a long lapse of time. The



first consists of walls of unhewn stones and fortresses. The next of cyclopean ruins.\* It is characterized by enormous blocks, fitted together with marvelous precision; by great stone slabs and stone beams, with rough figures carved on the slabs; by colossal rude statues; by "seats" and stairs cut out of the living rock. The third Peruvian style is much later than the cyclopean, and shows a great advance in civilization. The walls were built with polygonal-shaped stones, but they were much reduced in size and could be easily raised and put in their places. Rows of doorways and recesses occur in the walls with stone lintels. The fourth style is characterized by more regular courses.† The walls have a cornice below the highest course. We find also edifices with horizontal courses, and slightly projecting surfaces like rustication. In these we meet with rectangular doorways, windows and walls. The eastern side of the Temple of Cuzco has such a wall, but here the stones are smooth. The end on which the sun's image is placed is apsidal in shape, and the wall is one of the best specimens of Inca masonry. The most perfect specimen of the later style of architecture is at Ollantaytambo. Here is the niched corridor. The chief use of this was as a fortress commanding the gorge. Another such stronghold was at Pisac, in an almost impregnable position, and made strong by art, the rocks being faced with masonry and crowned with circular towers.

In many of the Inca palaces and temples there was a circle for astronomical purposes. The edifices on Lake Titicaca are of the latest style. The workmanship is unsurpassed, and the world has nothing to show in the way of stone cutting and fitting to equal the skill and accuracy of the Inca structures. The edifices were built around a court upon which the rooms opened, and some of the great halls were 200 paces long by 60 wide, and 35 to 40 feet in height. The roofs were of thatch; some of them were very durable.

I. The region about Cuzco is better known as the seat of the empire and as the place where the struggle between the Spanish troops under Pizarro and the natives under the Inca took place. We, therefore, take this region first for our description. The chief authority upon Cuzco is the Peruvian writer, Garcilasso de la Vega, who was a descendant himself of the Inca, and who had the greatest admiration for the splendor which so suddenly passed away under his very eyes. He has been charged with exaggerating the truth, but his descriptions

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\* A cut representing the cyclopean walls may be seen on page 51, and again on pages 285 and 289.

† The two cuts given on the following page are "Reconstructions," after imaginary models. The first one, representing the Palace at Cuzco, is taken from Windsor's "Narrative and Critical History of America." It is after a drawing given in "The Temples of the Andes," by Richard Inwards, London, 1884. The similarity of this "restoration" to that of Babylon will be noticed. Neither of the cuts represent the real architectural style of the two countries, but are used to show the possibilities of art.



PALACE AT CUZCO—RESTORED.



PALACE AT BABYLON—RESTORED.

are more vivid than any that have been written, and perhaps better represent the reality.

The following is a description of Cuzco taken from his writings:

The imperial city (Cuzco) was on a hill called Hunancuzco. Here Manco Capac established himself, and from it he subdued the country for a distance of eight leagues, and established one hundred villages, and selected a spot for building a temple where they might sacrifice to the sun. The Inca claimed to be a child of the sun, and the people believed he was a divine man, who came from the sun. His descendants, in imitation of him, had their heads shorn, leaving only a tuft of hair the width of a finger. They were shaven with razors, using knives of flint.\* The Incas wore a headdress of feathers of many colors, which was made with a fringe. They twisted the fringe three times around the head. They also bored their ears, and put in the holes ornaments like stoppers, which made the ears hang down a vera in length and half a finger in thickness.

The Incas understood the course of the sun's movements, and knew the time of the solstices. They were also acquainted with the equinoxes. To ascertain these they had a stone, which was very richly carved, erected in front of the Temple of the Sun. It was placed in the center of a large circle, and occupied the whole width of the courtyard, and across the circle a line was drawn, so that as the shadow of the sun fell upon the line they knew the equinox was coming; and when the sun bathed the columns with light, without any shadow, they knew that it was come. They held that the columns were the seats of the sun.

There were grand and wonderful edifices which had great doorways of masonry, some of them made of a single stone, 30 feet long, 15 feet in breadth, and 6 feet in depth. There were also enormous walls of stone, and figures of giants carved in stone. The Inca received the people in his chair, which was made of stone. He built the fortress of Cuzco, and other great edifices. He ordered landmarks to be set up to mark the boundries of the nations he had conquered. He also made a bridge over the river, and another across the mouth of Lake Titicaca, called the "Bridge of Huacachaco." It was made of osiers, and was on the water like a bridge of boats. Four cables made of wythes held it in place, two above and two below. The boats were made of large bundles of reeds.

The Temple of the Sun was in the imperial city of Cuzco. An altar to the sun was at the east end of the temple. The roof of the temple was lofty, and of wood covered with thatch. All the walls were covered, from roof to floor, with plates of gold, and over the altar was a plate of gold, with a circular face which was made of one piece of gold. Rays of fire seemed to issue from it, just as the sun seems to have. It was so large as to occupy the whole side of the temple.

The principal door looked to the north; all the doors were coated with plates of gold. The cloister of the temple, which surrounded it on four sides, had a cornice on its upper part consisting of gold. Around the cloister were four great walls. A temple was dedicated to the moon, which was the wife of the sun. One wall was covered with plates of silver which represented a woman's face; another wall was dedicated to the planet Venus and the Pleiades, for they looked upon the stars as the handmaidens of the moon. The whole roof was strewn with stars of silver, like the heavens on a starry night. There was a hall dedicated to the lightning; another to the rainbow. Besides the great halls, there were other buildings in the Temple of the Sun.

Some of the sacrifices were consumed in the court of the temple, and others in front of the temple. The principal streets ran from the great square of Cuzco toward the temple. Four streets, one on each side, led to

\*This style of wearing the hair was common among the ancient race in Egypt and Syria, and what is more remarkable this race was marked by "a snouty face" and retreating foreheads, and so resemble the ancient Maya race as well as the Peruvian.—See Sayce's "Ancient Races."



the temple. Within the temple there were five fountains, fed by pipes, which were of gold, though some of the pillars were of stone. A garden was in the temple, which contained many herbs and flowers and large trees. There were also in the garden many animals—large and small—birds and quadrupeds, reptiles and turtles, each placed in its natural position. There was also a vast quantity of vases, jars, etc.

The House of the Virgins was situated at some distance from the temple, for the intention of the Inca was that no man should enter the House of the Virgins, and no woman the temple. The virgins were dedicated to the sun, and were obliged to be of the same blood as the Inca. They lived in perpetual solitude, and remained virgins to the end of their lives. Their principal duty was to weave and make garments which the Inca and his wife wore on their persons. The nuns also made small tassels, which were fastened to a band about a cubit long.

Now, that the description by Garcilasso de la Vega was not overdrawn, is shown by the fact that many of the buildings still remain, and have been described by various travelers, but without understanding their significance. The best description has, however, been written by Mr. E. G. Squier, who was an archaeologist, and was acquainted with the history of the Incas and understood their architecture. The following is his description of the palace and temples:

The great cathedral of Cuzco rises on the very spot where the Inca, Viracocha, erected a building. All over this narrow tongue of land we find evidences of the Inca's greatness. The walls of the Temple of the Sun, of the Convent of the Vestal Virgins, of the Palaces of the Incas, are still preserved, and justify the extravagant praise bestowed upon the ancient builders. Cuzco is built on acclivities, more or less abrupt, and the ancient architects were obliged to resort to an elaborate system of terracing.

The terraces were faced with walls slightly inclining inwards, of the kind called "cyclopean." The monotony of the front is generally broken up by the counter-sunk niches resembling blind windows. These niches were always a little narrower at the top than at the bottom, as were all the Inca doors and windows, resembling the Egyptian style of architecture. The stones were of different sizes in the different structures, the larger stones at the bottom; each course diminishing in thickness toward the top of the wall. The joints are so close that it is impossible to introduce the thinnest knife blade. The world has nothing to show in stone cutting to surpass the skill and accuracy in the Inca structures of Cuzco.

The exteriors present the appearance of what may be called "rustic work." The buildings were generally placed around a court, from which all the rooms opened. The walls were from 35 to 40 feet high besides the spring of the roof. They were, perhaps, all of a single story, but we know there were edifices and private dwellings of two and three stories, with windows for the purpose of illuminating the interior. In some of the two-story structures, as, for instance, the palace of the Inca on the Island of Titicaca, in the lower rooms, which are the smallest, the roof or ceiling is an arch, formed by overlapping stones. I found no other arch in the stone edifices of Peru, but I found the true arch in the adobes of Pacha Camac.

The Temple of the Sun was probably the principal and most imposing edifice, not only in Cuzco, but in all Peru, if not in all America. It stood in the lower part of the Inca city, on the high bank of the Huatenay, eighty feet above the bed of the stream, and separated from the stream by a series of terraces faced with cut stone, which formed the famous Gardens of the Sun. The cornice of the walls was of gold, as were the inner walls. At the eastern end was a great plate of gold

representing the sun, all of one piece, which spread from wall to the other. Beneath it, seated in golden chairs, were the bodies of the Inca rulers. Surrounding the court were other structures dedicated to the moon, pleiades, thunder, lightning and rainbows. There was also a large salon for the supreme pontiff, and apartments for attendants. All these were described as having been richly decorated. Mr. E. G. Squier says:

The square was dedicated to the most solemn ceremonies of the religion, and within it none dared to enter, except on sacred occasions. The end of the temple which rose above the famous Gardens of the Sun, is to be seen, but modified by a sort of balcony, which has been erected at later times.

The structure dedicated to the stars was 51 x 26 feet inside the walls, and the ones dedicated to the thunder and lightning and the rainbow were so far as can be made out, of about the same dimensions. The apartments of the guardians of the temple were on the right hand of the court. The apartments were 33 x 13 feet each, entered by two doorways, and had eight niches in the wall.

The stone reservoir or fountain, carved from a single block, still stands in the center of the square. It is a long octagon, 7 x 4 feet, and 3 feet deep. The hole in the bottom by which it was filled, is still open.

Some of the chroniclers speak of the temple as being surrounded by a high wall. That the inner walls of the temple were of gold, is not credible. There exist in Cuzco in some of the private museums, portions of the gold plate with which the walls were covered.

The most conspicuous remains next to the Temple of the Cross are those of the Palace of the Virgins. It seems to have been a long and narrow building. The walls are now 750 feet long, 20 to 25 feet high, and resemble that of the Temple of the Sun, in the size and finish of its stones. This hall was dedicated to the virgins, who were sent there at the age of eight years, and were placed under the charge of the mother teachers.

The Huayna Capac was between the Temple of the Sun and the Palace of the Virgins. This was an immense structure, nearly or quite 800 feet long, built in the style called "rustic work," with numerous entrances. Over the principal door, sculptured in relief, are two serpents. On the other side of the Convent of the Virgins, was a series of structures containing the palaces of Yupanquis, called Puca Marca. This is, perhaps, the finest piece of ancient wall remaining in Cuzco, and one of the best specimens of the kind of work most common in Inca architecture. It is 380 feet long and 18 feet high. One of the most interesting palatial remains, is the palace of the Inca. It is situated on quite high ground, overlooking the Rodadero and the Hanging Gardens. It was about 200 feet long by 150 feet broad. The palace itself was of stone, faced after the style of the walls of the great temple. Separated from it were the schools built by the Inca Rocca. The great central square of the ancient city was 850 feet long by 550 feet broad.

The city of Cuzco was noted for its great temple, its religious houses and its palaces, and in this respect resembled the ruins of Central America, though it was built upon the mountain height, while they were built upon the plains.

There is one feature about the city which is especially worthy of notice. It contained an acropolis or fortress which resembled those recently discovered in the Umatsintla Valley in some respects, but differed in this: that it was built upon a bold headland and somewhat remote from the city itself. It has been compared by Mr. E. G. Squier to the Acropolis of Athens.



Athens, the Castle of Edinburgh, and the Rock of Gibraltar, and is called the Sacsahuaman. It is a conspicuous object from every part of Cuzco, and rises to the height of 760 feet to the north of the city. On it, the Incas raised their gigantic cyclopean fortress. Just at the point where it becomes so steep as almost to render ascent impossible, is a series of elaborate terraces supported by cyclopean walls, ornamented with niches, and called the "Terrace of the Granaries." It was here that the first Inca, Manco Capac, built his palace, some fragments of which still remain. The terraces were filled with the richest soil, still celebrated for its fertility. The crops gathered here, under the direct cultivation of the Son of the Sun, were regarded as sacred, and were distributed to be sown in the lands dedicated to the Sun throughout the Empire.

The great cyclopean walls are the most massive of monuments of similar character in both the Old and New World.



INCA'S CHAIR AT PUNO.

It was at the gateway of this fortress that the last desperate contest between the Incas and the Spaniards took place.

Garcilasso de la Vega says:

This was the grandest and most superb edifice that the Incas raised to demonstrate their majesty and power. Its greatness is incredible to those who have not seen it; and those who have seen it, and studied it with attention, will be led not alone to imagine, but to believe it reared by enchantment, by demons, and not by men, because of the number and size of the stones placed in the three walls, which are rather cliffs than walls, and which it is impossible to believe were cut out of quarries, since the Indians had neither iron or steel wherewith to extract or chop them. And how they were brought together is a thing equally wonderful, since the Indians had neither carts, nor oxen, nor ropes, wherewith to drag them by main force.



Nor were there level roads over which to transport them, but, on the contrary, steep mountains and abrupt declivities, to be overcome by the simple force of men. Many of the stones were brought from ten to fifteen leagues, and especially the stone, or rather the rock, called Saycasca, or the "Tired Stone," because it never reached the structure, and which is known was brought a distance of fifteen leagues, from beyond the river of Yucaj, which is a little less in size than the Guadalquivir at Cordova. The stones obtained nearest were from Muyna, five leagues from Cuzco. It passes the power of imagination to conceive how so many and so great stones could be so accurately fitted together, as scarcely to admit the insertion of the point of a knife between them. Many are, indeed, so well fitted that the joint can hardly be discovered. And all this is more wonderful, as they had no squares or levels to place on the stones to ascertain if they would fit together. How often, must they have taken up and put down the stones to ascertain if the joints were perfect. Nor had they cranes or pulleys, or other machinery whatsoever. But what is most marvelous of the edifice, is the incredible size of the stones, and the astonishing labor of bringing them together and placing them.

Mr. E. G. Squier's comments on this description are instructive. He says:

The stones composed in the fortress are limestone. Some were taken from their natural positions nearby; others were wrought from the limestone cliffs, or ledges, three-fourths of a mile distant. Two distinct and well graded roads still remain, leading to these ledges. Blocks, half hewn, still lie in the quarries, and some by the side of the roads. They must have been moved by combined human force on rollers of wood or stone, and forced up inclined planes to the positions they were to occupy. The "Tired Stone" is an enormous mass of 100 tons or more, and was never moved by human power. Its top, like the tops of hundreds of other rocks, is cut into seats and reservoirs; its sides cut into niches and stairways; a maze of incomprehensible sculpture. The largest stone in the fortress has a computed weight of 361 tons.

On the very summit of the rock of Rodadero there is a series of broad seats, rising one above the other in front and at the side, like a stairway, cut with great precision in the hard rock. This is called the "Seat of the Inca."\* One part of a low limestone cliff, not far from the Rodadero, is called the *Chingana*, or "Labyrinth." It is much fissured naturally. These fissures have been enlarged by art, and made into low corridors, small apartments, niches and seats, forming a maze in which it requires great care not to become entangled and lost.

This description of the city of Cuzco is confirmed by all the writers. The Temple of the Sun became the Convent of the Friars. The great cathedral rises on the very spot where the Inca, Viracocha, erected a building. The walls of the Convent of the Vestals and the palaces are still preserved, and where these walls have disappeared we find the ancient doorways which the modern builders have preserved, and are thus enabled to trace the outlines of the ancient city. That it had a barbaric wealth of gold and silver and stately structures we can well believe, for this is confirmed by concurrent evidence and existing remains.

The absence of sculpture in Peru, excepting small articles

\* These so-called "seats" are very common throughout Peru. The Inca's Chair at Puno is shown in the cut; another one is at Cuzco; another at Copacabana. Seats like these are numerous on the mountains around the City of Mexico, and also at Quemada in the northern part of Mexico.

in stone, is conspicuous and quite in contrast with what we find in Mexico and Central America.

It will be noticed that there is very little columnar architecture in Peru. In this respect there are great contrasts to the ruined cities of Mexico and Central America, for columns there are very prominent, though they are columns without capitals. Another difference may be also noticed. In Central America lattice work is frequently represented in stone on the façades, but in Peru there is no lattice work, but arabesques and raised block work.

One of the most curious architectural structures in Cuzco is the Temple of Viracocha. The dimensions of it were as follows: the ruins consist of a wall of adobe 40 feet high, built on a stone foundation eight feet high. The wall consists of twelve piers,  $19\frac{1}{2}$  feet wide, separated by open spaces which form doorways. The roof was supported on twenty-five columns, and the width of the temple was 87 feet. It would seem that the Incas wanted to display their grandeur and power by the majesty of their edifices and the ingenuity of the masters in art, not only in the smooth stones cut in the rough rock, but they also proved their military skill by erecting fortresses.

The next city which is to be described is one situated in the valley of the Yucay, which is one of the most beautiful in Peru. A vast system of terraces lines it on both sides. These terraces rise from the level ground, and cover the sides of the mountains to the height of 1,000 to 1,500 feet; narrowing as they rise. Very often an artificial aqueduct starts from some ravine and is carried along the mountain side to the gardens. Every strip of land is utilized, and every foot of ground is irrigated.

These have been described by various travelers. The principal fortress is reached by a series of mountain paths which go zig-zag up the mountain side. Here is a confused mass of buildings and blocks of stone. A precipice rises more than a thousand feet, but below; the view from the fortress in every direction is wonderful in variety, in beauty and in grandeur. Mr. E. G. Squier says:

Within the walls are rock-cut seats: doorways of beautifully hewn stones, with jambs inclining inward, long ranges of niches in cyclopean walls; stairways and terraces, with a shabby and tottering cross at the extremity of all, bending over the village that lies like a map beneath.

The most interesting series of stones, however, are six great upright slabs of porphyry, supporting a terrace, against which they slightly incline. It will be observed that they stand slightly apart, and that the spaces between them are accurately filled in with other thin stones in sections. The sides of these, as well as the larger slabs which they adjoin, are polished. Gigantic, as are these blocks, they are small in comparison to the "Tired Stones" lying on the inclined plane leading to the fortress. One of these is 21 feet 6 inches long and 15 feet broad.

The whole valley of Ollantaytambo is laid out like a garden, in a system of terraces, one below the other, falling off, step by step, to the river; each terrace level as a billiard table, or with just enough declivity to permit of easy irrigation. The river flows at the very foot of the bare majestic



mountain at its further side, and falling into it at right angles is the chafing, turbulent mountain, snow-fed torrent.

Facing us, most remarkable of all, is the Mountain of Pincullana, or "Hill of Flutes," an abrupt, splintered mass of rocks, thousands of feet high, cutting the sky with its jagged crest. Hanging against its sides, in positions apparently, and in some places really inaccessible, are numerous buildings. In one group is a series of five long edifices, one above another on corresponding terraces, called the "School of the Virgins." On a bold projecting rock, with a vertical descent of upwards of nine hundred feet, stands a small building, with a doorway opening on the very edges of the precipice; it is the Horca del Hombre, the Tarpeian Rock of the Ollantaytambo, over which male criminals were thrown in the severe Draconian days of the Incas. Above it, at a little distance, on a narrow shelf, are the prisons in which the criminals awaited their doom. To the left of these again, separated by a great chasm in the mountains, but at the same giddy height, and overlooking another precipice not less appalling, is the Horca de Mujer, or place of execution for the women.

Nothing can exceed the regularity and taste with which the town was laid out, the streets running parallel to the stream that watered it, which was and is, confined between walls of stone; regular terraces of richest soil, with flights of steps at intervals, rise from the level on which the town stands. Ancient houses, substantially perfect, are still inhabited, and give us an idea of the manner in which the ancients lived. Bridges span



SUSPENSION BRIDGE OVER RIO PAMPAS.

the streams, similar to those which were used in prehistoric times. One such bridge is seen in the cut. It is a suspension bridge made of braided wythes. It consists of several cables of braided wythes placed side by side, and anchored by a variety of clumsy devices to buttresses. These bridges are seldom level, and besides sagging greatly, often get lop-sided.

Ollantaytambo was the frontier town and fortress of the Incas. The site of the palace is not only pointed out, on the terraces overlooking the valley, but the walls remain entire, showing that the Inca architecture was not unlike the modern, as it is a two-story building, with walls and windows and stairways, but was elaborate in its plan. One of the most remarkable features about Peru, is that the ancient cities might be within sight of one another and yet would be inaccessible, as there were deep gorges or snowy ranges, the streams flowing in different directions.

The fortress of Pisac is not far from the city of Yucay. It was one of the most formidable and gigantic fortresses of



Peru, and can be paralleled only by the great "Hill Forts" of India. The ascent to it is by a stairway partly cut in the rock and partly composed of large stones, with projecting bastions on which are towers and magazines of stone ready to be hurled upon an advancing assailant. At intervals are resting places, paved and surrounded by stone seats, but always dominated by some sinister tower. Near the fortress are terraces ascended by flights of steps, with conduits for irrigating and supplying the fortress with water. Every rood of surface that can be, is propped up by terraces and cultivated. There is not a point of the mountain that is not somewhere commanded or protected by a maze of works which involves the skill of an engineer to erect, and baffles description.

The most interesting object found at Pisac, is the enclosure in which is the rock which served as a sun-dial, called "Inti-



SUN DIAL "INTI-HUATANA," NEAR PISAC.

Huatana," the place where the sun is tied up. The entrance to the enclosure is through a doorway, by a flight of stone steps.

Another stone similar to that at Pisac overlooks the fortress in the ancient town of Ollantaytambo; another near Cuzco, within the circular part of the great Temple itself, also on the Sacred island of Titicaca is another, made out of the limestone rock. The sacred character of the edifices surrounding these, is acknowledged. They were devices by which the solstices and equinoxes were marked, and the length of the solar year was determined. Garcilasso de la Vega says there were sixteen of these pillars at Cuzco. It was the duty of the priests to watch the shadows of the columns which were in the center of the circle. When the rays of the sun fell full on the column, and it was bathed in light, the priest declared that the equinox had arrived, and proceeded to place on it flowers and offerings, and the Chair of the Sun.

Acosta says that at Cuzco there are twelve pillars. Every month, one of the pillars denoted the rising and setting of the sun, and by means of them they fixed the feasts and the seasons for sowing and reaping, and for offering sacrifices.

The Circle of the Sun at Sillustani has already been described. This consisted of a pavement in a circle, surrounding an enclosure, in which were two pillars, which were in a line so as to catch the rays of the sun and cast their shadows. This resembles the circle at Stonehenge, and shows that sun worship was attended by the same symbols everywhere. Mr. E. G. Squier says of the gnomon at Inti-Huatana that it is the best preserved of any. He says:

Steps in the rock lead to the summit. It is cut perfectly smooth and level, affording an area 18 feet long by 16 feet broad. In the center of the area, and rising from the living rock of which it is a part, is the gnomon. It is in the form of a cone, sharply cut out and perfectly symmetrical, 11 inches in diameter at its base, 9 inches at its summit, and 16 inches high. I was told by the Governor of Pisac, who accompanied me on my visit, that this column, or gnomon, was formerly surrounded by a flat ring of chumpe, or Peruvian bronze, several inches high, which he had often seen when a boy.\*

II. Turning from this region, and going south, we come to the lake of Titicaca and the ruins found at Tiahuanaco. This has been called the "Thibet of the New World." Here at an elevation, 12,900 feet above the sea, is the evidence of an early American civilization, regarded as the oldest and most advanced of all on the American continent. The ruins are the most important and the most enigmatical. They consist of rows of erect stones of admirable workmanship; long sections of foundations, with piers and portions of stairways; blocks of stone, with mouldings, cornices and niches, cut with geometrical precision; vast masses of stone partially hewn; great monolithic doorways, bearing symbolic monolithic ornaments in relief, smaller, rectangular, symmetrically shaped stones. Here are several structures; one called the "Fortress," and another called the "Temple," both marked by lines of erect stones; also a smaller edifice of squared stones, with traces of an exterior corridor, which has sometimes been called the "Palace."

The fortress is a great mound of earth, 620 feet long, 450 feet wide, and 50 feet high, the sides of which were terraced. On its summit are sections of foundations of rectangular buildings. On its slopes lie blocks of stone, sculptured with portions of elaborate designs. To the southeast of the fortress is a long line of ruins, one of which is called the "Hall of Justice." It consists of a rectangle 420 feet long, 370 feet broad, defined by a wall of cut stones supporting an interior platform of earth, 130 feet broad, and enclosing a sunken area, defined by a wall of cut stones; the court being about 240 feet

\* E. G. Squier, "Peru," page 525.



long, and 160 feet broad. It is a kind of platform, made of well cut blocks of stone, held together by copper clamps. On the eastern side of the platform are three groups of seats, cut in the stone; one group divided into seven compartments. Between the central and side groups were reared monolithic doorways. One of these is unquestionably the one forming the entrance to the cemetery of Tiahuanaco.

This cemetery is an ancient rectangular mound, about 100 paces long, 60 feet broad, and 20 feet high. Its summit is reached by a gateway whose back differs from that of the front. It now stands erect, and is described by every traveler.



GATEWAY OF CEMETERY AT TIAHUANACA.

The following is the description given by Mr. E. G. Squier of the sculpture:

The gateway of the cemetery is the most remarkable monument. This is formed of a block of stone, somewhat broken and defaced on its edges, but originally cut with precision; 13 feet 5 inches long, 7 feet 2 inches high above-ground, and 18 inches thick. Through its center is cut a doorway, 4 feet 6 inches high, and 2 feet 9 inches wide. Above this doorway, as it now stands on its southeast side or front, are four lines of sculpture in low-relief, like the Egyptian plain sculptures, and a central figure, immediately over the doorway, sculptured in high relief. On the reverse, find the doorway surrounded by friezes or cornices, above it, on each side, two small niches; below which, also on either side, is a single large niche. The stone itself is a dark and exceedingly hard trachyte. The



central and principal figure is boldly cut in a conventional style. The head is surrounded by a series of what may be called rays, each terminating in a circle, the head of a condor, or that of a tiger, all conventionally but forcibly treated. In each hand he grasps two staves, or sceptres, of equal length with his body, the lower end of the right hand sceptre terminating in the head of the condor, and the upper in that of a tiger; while the lower end of the left hand sceptre terminates in the head of the tiger, and the upper is bifurcate and has two heads of the condor. The staves or sceptres are not straight and stiff, but curved as if to represent serpents, and elaborately ornamented as if to represent the sinuous action of the serpent in motion.

The winged human headed or condor-headed figures are represented as kneeling, with their faces turned to the great central figure, as if in adoration. Each one holds before him a staff or sceptre.

The lower row of sculpture differs entirely from the rows above it. It consists of repetitions of the head of the great central figure, surrounded by corresponding rays arranged alternately within zig-zags or grecques, every angle terminating in the head of a condor. Figures also of men crowned with the plumed cap, and holding in their mouths what appear to be trumpets, are seen standing over the faces.

The proximity of the sanctuary and the sunken area and the portico, or shrine, to the monolithic gateway and the mound, or cemetery, is very suggestive, for it would seem as if all the symbols of the primitive nature worship were represented upon the gateway, and were very suggestive to the people who approached the cemetery. The body of the temple is a rectangle, 388 x 445 feet, defined by lines of erect stones, partly shaped by art, fifteen feet apart; a wall, built up between them, supporting a platform of earth, eight feet above the general level. These stones are less in dimensions than the stones composing the circle in Stonehenge, but are much more accurately cut and constitute a straight colonnade. The stones are panelled, the sides and edges are slightly cut away, so as to leave a projection of about an inch and-a-half, designed as if to retain slabs fitted between the stones.

The temple seems to be the most ancient of all the structures of Tiahuanaco. It is the American Stonehenge. The stones defining it are rough and frayed by time. The walls between its rude pilasters were of uncut stones; and although it contains the most elaborate single monument among the ruins, and notwithstanding the erect stones constituting its portal are the most striking of their kind, it nevertheless has palpable signs of age and an air of antiquity which we discover in none of its kindred monuments. Of course its broad area was never roofed over, whatever may have been the case with smaller interior buildings no longer traceable. We must rank it, therefore, with those vast open temples (for of its sacred purpose we can scarcely have a doubt), of which Stonehenge and Avebury, in England, are examples, and which we find in Brittany, in Denmark, in Assyria, and on the steppes of Tartary, as well as in the Mississippi Valley.

The Sacred Islands of Titicaca are worthy of special notice. The Incas traced their origin to this spot. According to tradi-

tion, Manco Capac and his wife started on their errand to instruct the savage tribes in religion and the arts, and reduced them under his government. Here were remains of the Temple of the Sun, a convent of priests, a royal palace, and not far distant is the Island of Coati, on which stands the famous palace of the Virgins of the Sun, built around two shrines dedicated to the Sun and Moon. The sacred rock of Manco Capac is on the island, a rock which sheltered the favored Children of the Sun, and the Pontif Priest and King, who founded the Inca Empire. This rock is a natural formation. It protrudes above the ground, and is about 225 feet long and 25 feet high. Its position is remarkable, and its precipitous sides and dark cavernous recesses were likely to awaken



LAKE TITICACA AND PALACE.

superstition. In front of it, there is an artificial terrace and shrines devoted to the thunder and lightning. From the front of the terrace the island falls off to the lake by a steep declivity. Not far away are several structures which were residences of priests and attendants. Leading up to the shrine is a broad road, hewn in the rock, and about midway are what have been called the "Footprints of the Inca." To the northward of the rock is the Storehouse of the Sun, called the "Labyrinth." A fourth of a mile to the southwest are other ruins.

The "Fountain of the Incas" is here. Amid terraces, supported by walls of cut stone, is a pool 40 feet long, and 10 feet wide, filled by water that comes through subterranean passages. Below this reservoir the water is conducted from terrace to terrace, until it is discharged into the lake. Near-by, is the



"Palace of the Incas," which stands on a beautiful site surrounded by terraces, which extend in graceful curves, making an amphitheatre. The building itself is 51 x 44 feet, two stories high, and fronts on the lake, and is divided into twelve small rooms. Every room had its niches. The walls are stuccoed. The second story has its entrance on a level with the terrace. The front forms a balcony or esplanade, 22 x 10 feet, and has two niches raised enough to afford easy seats; and before it is one of the most extensive views in the world. In the center of the view is the island consecrated to the moon.

At Pimo, within the basin of the lake, is the sandstone rock, which is cut, or carved, into a seat resembling a large arm chair; while below, in front, and around, are other seats, reached by other flights of steps, also cut in the rock. It is said to have been the resting place of the Incas.

The Island of Coati is in front of the palace, six miles from it. There are two groups of ruins on the island. The principal one is called the "Palace of the Virgins of the Sun." It occupies the summit of a series of seven terraces, and is reached by zig-zag paths or curiously designed stairways. The palace is built around three sides of an oblong court, 183 x 80 feet. All the architectural ornaments are on the façades fronting the court, and consist of lofty and elaborate niches. In the center of each is a panel. These break up the monotony of the walls. There is a line of cornices over the entrances. Every door opening on the court led to a separate system of chambers. The view from this palace and the terraces is wonderful.

Burial towers, hill forts and chulpas are numerous in this locality, also sun circles. The chulpas at Sillustani are the most remarkable of all. Here, is the Sun Circle which has already been described. Two leagues from the lake are the two remarkable sandstone pillars and pavement, represented in the cut. These are carved to represent lizards and frogs and elaborate geometrical ornaments. It is said that they once formed the jambs of an Inca structure which stood on the peninsula of Sillustani. These pillars show the style of ornamentation which was common throughout Peru, and which was



SANDSTONE PILLARS AND PAVEMENT.



s characteristic of the Peruvian architecture, as the projecting and the Manitou face were of the Maya architecture in Central America.

III. The third district in which the ruined cities of Peru are to be seen, is situated along the sea-coast. Here, for 600 miles north and south, were many valleys in which a race, which was distinct from the Quichuas of the mountains, had settled. What this race was, and whence it came, is not at present known, but the fact that there are so many lofty pyramids in the region, and they resemble the pyramids of Central America, make it reasonable that they were in some way related to the ancient Maya race. Whether this is true or not, the conclusion is forced upon us that the people came by way of the sea, and established themselves near the various harbors which are found at intervals on the sea-coast.

The ruins are most numerous in the vicinity of Lima, along the Chillon River; also at Pachacamac, at Limatambo, at Truxillo, at Chimú, at Moche, and at Huacatambo. It should be said, that in these places the style of erecting the walls and the arrangement of the cities are quite different from those practised by the people on the mountains, or the Sierras



ORNAMENTAL WALL NEAR LIMATAMBO.\*

between them. The Inca Empire had obtained its greatest extension and power precisely at the period of the Discovery by Columbus. From their great dominating central plateau, the Incas had pressed downward toward the Pacific, on one hand, and to the dense forests of the Amazons, on the other. The empire extended north and south, not far from 3,000 miles, and from east to west, not far from 400 miles, covering a territory equal to the United States east of the Mississippi River. The valleys are often separated from each other, and their inhabitants constitute separate communities, independent in government, and with little intercourse. They resembled in this respect the

\* The wall surrounding the Huaca or "Sacred Place" is decorated with the sunken panels resembling the stepped figures of the Zunis and Moquis, but reversed.

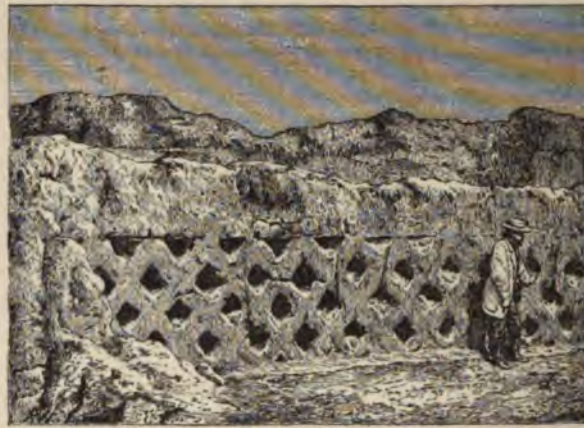
people who were settled in different valleys on the northwest coast. Those who were living in Titicaca resembled the people who settled in the valley of Mexico, and the beginnings of Inca civilization were developed about this lake, as those of the Toltec civilization were near the northern lake.

These cities have all been described by Mr. E. G. Squier. He says:

Pachacamac is one of the most notable spots in Peru, and was the sacred city of the natives of the coast before the conquest by the Incas. Here was the shrine of Pachacamac, their chief divinity, and here also the Incas erected a vast Temple of the Sun, and a House of the Virgins of the Sun. The name, "Pachacamac," signifies "he who animates the universe," the creator of the world. The two principal edifices now traceable, are the temple which supported the shrine of Pachacamac, and that reared by the conquering Indians, called the Convent of the Virgins. The former occu-

pies the head-land, which rises about 500 feet above the sea. About halfway up the hill commences a series of four vast terraces forming a pyramid, the surface at the top covering several acres. It was covered with ruins.

The building, having the Inca type, is a convent, rather than a temple. A remarkable feature is an arch, perfectly turned the length,



RUINED WALL NEAR CHIMU.\*

feet 9 inches; width, 5 feet 6 inches; height, 8 feet; spring of the arch, 13 inches. A true arch is a thing exceptional.

A single tomb explored by Mr. Squier revealed several mummies wrapped in blankets of finely-spun wool, also cotton cloth, diamond-shaped pattern; a necklace of shells; spool of thread; knitting tools; toilet articles; a boy's sling and pottery.

The ruins known as the "Palace of the Inca," are found in the valley of Canete, in the vicinity of Lima. A row of piers give entrance to a square court, enclosed by a wall; many of which are niched. Ruins in the valley of Huarco are remarkable for numerous flights of well-laid steps and a temple, which was scarcely less adorned than that of Pachacamac in richness of gold and silver. Here was an idol called Rimac. The

\*Ornament resembling lattice work was formed out of adobe and stucco. The wall surrounded a hall or court, but had a graded way leading to its summit.



double wall that surrounds the temple and other structures of the place, is more than three miles long, and in some places more than sixteen feet high. A portion of the wall has the peculiar sunken panels shown in the cut. There are a number of clusters of ruined buildings within the walls.

The ruins of Cajamarquilla are described by Mr. Squier. There are no windows, and no traces of gables, but the doorways have peculiar shapes; some of them ovals, some triangles, and some circular.

These ruins consist of three groups of buildings around a central mass, with streets between them; pyramidal edifices, rising stage on stage, with terraces and broad flights of steps leading to their summits; also apartments connected by blind and narrow passages, and subterranean vaults connected with peculiar doorways.

The walls of the huaca or pyramid temple near Limatambo show the style of ornamentation which was peculiar to Peru. It is a stepped figure reversed.

The ruins at Truxillo, on the plain of Chimu, consist of long lines of massive walls, gigantic chambered pyramids, remains of palaces, dwellings, aqueducts, reservoirs, granaries, prisons, furnaces, foundries, and tombs, extending for many miles in every direction. These are the ruins of Grand Chimu, the most extensive and populous of all the cities of ancient Peru. A league or more from the city was the aqueduct, which was carried across the valley on a lofty embankment more than sixty feet high, built of stones and earth, with a channel on top of the dimensions of our ordinary canals. It was designed to supply the ancient city. Below, stretching away over an area twelve to fifteen miles long, and five or six miles broad, was the plain of Chimu, covered with ruins. They consist of a wilderness of walls, a labyrinth of ruined dwellings, gigantic huacas or pyramids, great masses which the visitor finds it difficult to believe are artificial; terraces, cleared of stones, each with its acequia for irrigation, evidently the gardens and pleasure grounds of the ancient inhabitants. Here were two rectangular enclosures, each containing a truncated pyramid. One of the enclosures was 252 x 222 feet, the pyramid 162 feet square and 50 feet high; the other enclosure was 240 x 210 feet, walls 20 feet high, the pyramid 172 feet long, 152 feet wide, 40 feet high.

The pyramid of Obispo is 150 feet high, and covers an area of about eight acres. The summit is reached by zig-zag lines, or stairways. In front of it is an ancient avenue or street, lined on both sides by monuments.

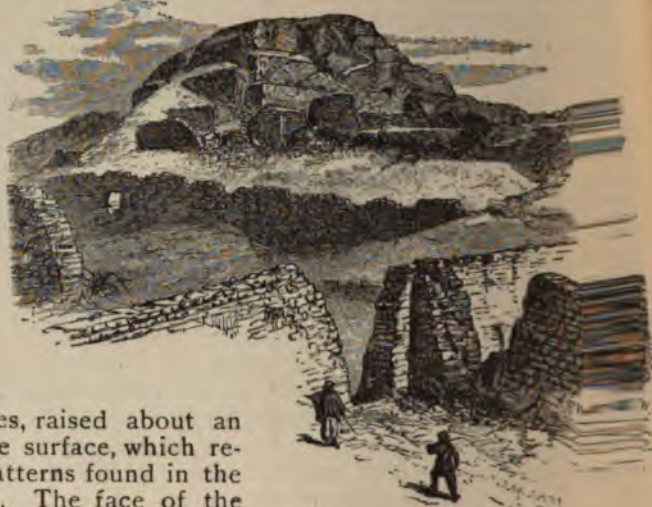
The great pyramid of Moche stands on the edge of the desert slope, just where irrigation begins. A kind of gigantic landmark, the most impressive monument seen in Peru, constructed throughout of large adobes, rectangular in shape, covering a trifle more than seven acres, 200 feet high, the summit of which was reached by a causeway or stairway. This



structure, with that of Obispo, Toledo, etc., in common with the teocallis of Mexico and Central America, may have supported buildings sacred to various divinities. The causeway extends from the base of the pyramid, 1,120 feet to a rocky hill, around which are ruins. Here was a stairway leading up to the level area, which was about 400 feet long, and 350 feet wide, and on it stands a terraced pyramid about 200 feet square.

The ruins of Grand Chimu resemble those already described, for here is a great pyramid, a number of palaces, ruined walls with the front in the shape of lattice work, an acropolis, a palace in which was the Hall of the Arabesques, and several

other interesting features. This hall is  $52\frac{1}{2}$  feet wide, 100 feet or more in length, and covered with an intricate series of arabesques or stucco ornaments in relief, a succession of reduplicated figures, raised about an inch above the surface, which resemble the patterns found in the textile fabrics. The face of the wall is twelve feet high, and the lattice work is made of adobe.



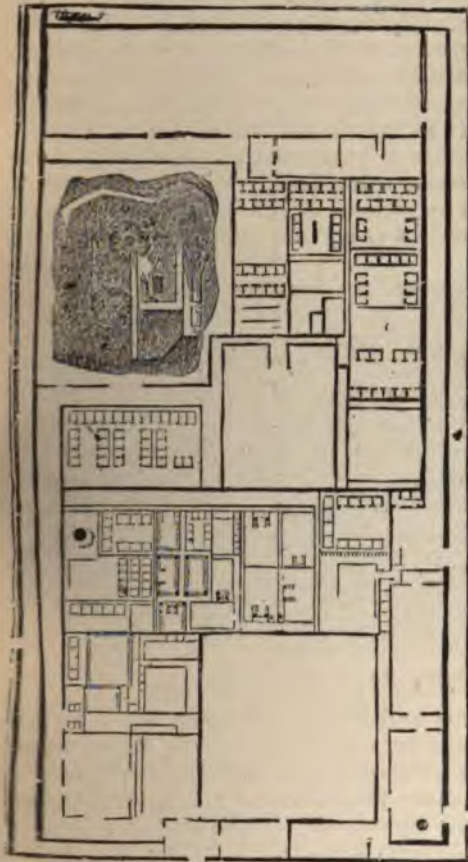
PYRAMID NEAR NEPENA.

The Palace of Chimu is an interesting building, the walls of which are highly ornamented in figures, with lozenge-shaped openings, and others with blocks, or honey-combed. Rivero and Tschudi have described the palaces at this place, and speak about the relics discovered here: mantles of cloth, interwoven with bright feathers; figures of men, and implements of metal of various kinds. The arts, customs, and religion of the Chimus have been described by Garcilasso de la Vega. Objects of gold and silver were found, consisting of vases, gold plates, silver medals, lizards, fishes, serpents, birds, many weapons of bronze, agricultural implements, trowels, knives resembling chopping knives, pottery, vases in the shape of a house supported by a house, musical instruments, trumpet ts, vases in the shape of human and animal heads, also vases resembling the religious symbols, among which are divinities of the air, earth, and water, and the combat between the man of the earth and the man of the sea.

There are many models of the ancient houses contained in the pottery relics which were gathered here, and from these we may learn the luxuriant habits of the people. Some of these miniature houses are in the shape of pavilions, with columns supporting the roof; others, in the shape of shrines, with the figure of the divinity inside of them; others represent

shrines or temples on the summit of terraced pyramids resembling the teocalli of Mexico; others, in the shape of towers with conical roofs, on the summit of pyramids, around which may be seen the pathway that led to the temple.

The ruins of Huacatambo, in the valley of the Nepeña, are, perhaps, the most interesting of any in South America. Here are ancient remains of the "Huaca of the Serpent," so named from a gigantic representation of a serpent cut in the rock, which commences and terminates in a reservoir. Mr. Squier says: "We found the ruins were numerous and interesting. We could discern a number of gigantic huacas standing out boldly on the Atlantic slope, while along the brow of the headland we could trace the line of a great acequia, which conducted the water to



PALACE WITH COURTS AND HUACA,  
NEAR TRUXILLO \*

a vast reservoir in the valley among the hills." Mr. Squier also says that most of the pyramids were originally solid, but they were built in terraces, and were probably used for the same purpose as those of Mexico and Central America, as sites for the ancient temples. They were, in fact, fortresses

\* This enclosure, with the palace and its three courts and sacred burial pyramid or huaca, covered thirty-two acres. It resembles the buried city of Pompeii, as the ruins of buildings are numerous. Within the pyramid are walled chambers which are full of mummies dressed in royal attire.



as well as temples, for on their summits the kings and priests might be gathered, and the people could stand on each terrace and resist the invaders, to great advantage.

There are pyramids in Peru, which were used altogether for burial purposes, one of which is illustrated in the cut. This was found to contain a vast number of bodies, showing it to be one great burial heap. There are other pyramids which are surrounded by stone walls, showing that they were built by the earlier race, the one that preceded the advent of the Incas.

When Pizarro discovered Peru, he found a great nation enjoying a comparatively high degree of civilization. Constant employment of the people in systematic labor and organized recreation, without oppression or hurry, with no rank of wealth, except that which was held by the rulers; a race too gentle to be ambitious, too docile to be vicious, enabled them to enjoy the most peaceable and prosperous condition ever reached on this



BURIAL MOUND NEAR TRUXILLO.

continent. The state of art and architecture was not equal to that which was found by Cortez and his troops in Mexico and Central America, but the abundance of gold and the use of feathers and textile arts, gave the conquerors the impression that they were equal, if not superior to, the Mexicans.

A tradition appears to have come down from the Megalithic Builders which preserves the names of the deity, Pachacamac. This Megalithic empire became disintegrated, and the empire disappeared. But a second empire began with the Incas. This empire resembled that which prevailed in Central America, although the face of the country was in great contrast. There were not so many cities nor were they as near together, for the seats of empire were scattered; the most prominent being at Cuzco, on Lake Titicaca, and those on the coast near Lima.

The cities were without fortifications, but there were fortresses on the mountains near-by, and the temples were regarded as so sacred, as to be secure from invasion. It was



the conception among the people that the kings and ruling classes were in a sense divine, and, as a consequence, the people were ready to sacrifice their lives for their safety. It was only from the invasion of a foreign enemy that danger threatened them; and even then, there was a sense of awe and fear, which prevented the native tribes, though hostile, from attacking the cities.

The burial customs varied among the different tribes, for in the central provinces the bodies were mummified; along the sea-coast they were buried in the huacas or pyramids. A burial mound called the "Sugar Loaf" may be seen at Huaca. It was 66 feet high, 80 yards broad, and 130 yards in length, and is said to be composed of one vast mass of human bodies and bones, the remains of prehistoric people. Another mound, 95 feet high and 428 yards long, was enclosed by a double wall, 816 yards long and 100 yards across, making an enclosure of



BURIAL MOUND AND CHULPAS NEAR LIMA.\*

715 acres. These great mounds remind us of the pyramid mounds of the Gulf States, but they were used as burial places, rather than as the sites of the houses of the ruling classes. There was a reason for the use of the pyramidal form for a burial place, as the regard for the hills and mountains would make these great heaps sacred. It was more convenient to deposit bodies in them than it was to excavate burial places in the mountains. Some of the pyramids contained mummified bodies in great numbers, arranged in strata, showing that they had been used as burial places for a long series of years. Occasionally the pyramids were surmounted by chulpas or towers, as may be seen in the cut.

The government reminds us of that which prevailed among the tribes of the Northwest coast, where every village was under

\*These burial pyramids contained countless bodies laid in strata, showing that for generations the distant tribes had carried their dead to this place.

the control of a chief, who received his authority from the supernatural divinity, who ruled over the sea, or the forest, and whose authority was symbolized by totem poles. There was this difference that the symbol of authority was the image of the sun, the image of the moon, or heavenly bodies. There were fortifications, as we have said, on the summit of the isolated hills, but the tribes united in veneration for the sun, and each had its own deified ancestor. These were often animals, such as the pimas and condors, which had been converted into tribal deities.

The architecture of the Peruvians was in great contrast to that of Mexico and Central America. There were, to be sure, many temples, and these were the most sacred places in the city; but they were placed upon the common level and never upon a high pyramid. There were also palaces in each city, but the façades of the palaces presented an entirely different appearance from those in Central America. There were no arches, no columns, and no panels, such as are seen in all of the cities of the Mayas. There were no scrolls, or grecques; no figures resembling the Roman key, or Greek fret; no hooked ornament or Manitou face, such as was common in Mexico and Central America.

There is, however, an important lesson to be derived from this, for it proves that architecture was everywhere greatly affected by the religious conceptions and social conditions of the people, the only elements which can be said to be held in common by all people being the mechanical principles which must enter into every building erected by man.

Many different purposes are served by the structures which we have described, purposes which arose in connection with the social, domestic and religious life of the people, but the architectural ornaments came from causes which were hidden deep in the heart and are difficult to analyze or explain.

## THE KĀURĀVAS OF THE HINDU PURANAS.

BY C. STANILAND WAKE.

Assuming the Rajputs to be Kshatriyas, to which stock the Kauravas belonged, can any modern representatives of the last-named people be found? Colonel Dalton remarks in his "Descriptive Ethnology of Bengal," that the present Kairs, or Kauravas, form a considerable proportion of the population of Jashpūr, Udaipūr, Sirgūya and other districts of Chota Nagpore, and that "they all tenaciously cling to the tradition of their origin, that they are the descendants of the survivors of the sons of Kuru, called Kauravas in the Purāns, who, when defeated by the Pāndavas at the great battle of Kuru Kshetrya and driven from Hastināpūr, took refuge in the hill country of Central India." Sir George Campbell, author of "Ethnology of India," speaks of the Kairs as being in appearance "ultra-aboriginal, very black, with broad noses and thick lips, and eat fowls, &c., bury most of their dead and condemn Bramins; so that their Hinduism is scarcely skin-deep." Colonel Dalton states that certain ruins in Sirgūya are referred by tradition to a period when the dominant people in the country were Saonts with whom the Korwās or Kharwās, by whom is meant the Kauravas, are connected. The identification of the latter with the Cherus suggested by Campbell would account for the dominant position occupied by the Kharwars in a large district. The Cherus, or Cheros, are traditionally said to have possessed at one time the whole of Behar, and it was thought by Buchanan that they were princes of the Sunaka family, who flourished in the time of Gautama, or about the sixth or seventh century before the Christian era. In the district of Shāhabād most of the numerous monasteries of antiquity are ascribed to the Cheros, the eastern part of whose territory was afterwards named Magadha. Buchanan supposes that they and the aboriginal Kols were originally one people, but the Cheros, having adopted the doctrines of Gautama, became recognized as purely born Hindus. It is remarkable that, as Colonel Dalton shows from Buchanan, "the old Cheros, like the dominant Kolarian family of Chūtiā Nāgpūr, claimed to be Nāgbansis, and had the same tradition regarding their origin from the great 'Nag' or dragon that has been adopted by the Chūtiā Nāgpūr family," which are, even in Gorakhpūr and Bihār, allowed to be the heads of the Nāgbansi family. The Mawāsi Kols claim a similar serpent origin.

The Rajwars are associated with the Kharwars by Sir George Campbell, and he suggests that, as the Khara of the latter may be the same word as Cheru, so the former may be a corruption of Rajwars, the term by which the Bhars are more commonly



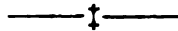
known. Sir Henry Elliot speaks of this people as Bhars, Rajbhar or Bharpatwa, and he says that many old stone forts, embankments and subterranean caverns in Gorakpur, Azimgarh and other districts are ascribed to them,\* showing no inconsiderable advance in civilization. They are supposed to have been referred to in the Puranas under the name of Bharatas, a people who are spoken of as being very numerous. The resemblance of this race to that of the great ancestor of the Kauravas is noteworthy, and it would not be surprising if the modern Bhars prove to be representatives of that ancient people, in which case we might expect to find some trace of the connection in the incidents mentioned in the Mahabharata, especially in the alliances formed by the Kauravas. One of the thirty-six tribes of Rájput is called Gaur rájput, and in the Northwest provinces the Gaurs are divided into three classes, one of which is the Bhat Gaur, a name supposed to have been derived from intercourse with Bhats. Besides Gaur Rájputs there is a third tribe of Brahmanic descent, known as Gaur tagá. According to Sir Henry Elliot, this tribe is of peculiar interest, as their traditions say they were invited from Gaur, the ancient capital of Bengal, by Rajá Janamejaya, for the purpose of exterminating snakes. That writer adds that "the circumstances attending the sacrifice of the snakes by Janamejaye are preserved in local tradition in almost precisely the same form as they are given in the 'Adi Parva' of the Mahabharata."

It is remarkable, however, that, as pointed out by Sir Henry Elliot, almost all the Taga clans say that they came, not from Gaur, but from Haryana in the Punjab, and even derive their names from places in that country. They are probably to be identified with the ancient people of that country known as Takkas, who are supposed to have descended from Takshaka, the founder of the Nagas, a serpent race. General Cunningham suggests, that the legend of the death of Parikshita, the successor to Yudhishtira in the Raj of Hastinápura, by the bite of a snake may be interpreted as showing a conflict between the Pandavas and the Takkas of the Punjab, in which the latter were victorious. This would allow the Takkas to be identified with the Kauravas,† an idea which is not inconsistent with the opinion of Mr. Beames that the Takkas were nothing but low Aryans. In this case, and if also the Kauravas were Takkas, we may well have the modern representatives of the former in the tribes, such as the Chero, who appear to form a link between the Aryans and the Kolarians. Sir George Campbell makes the suggestive remark that India "seems to have been known to the ancients (who approached it coastwise from the

\* Dr. Hunter (Imp. Gaz. of India, p. 278) states that all remains of prehistoric masonry in Oudh and the Northwest provinces are ascribed to the Buddhist, or non-aryan Bhar.

† It is worthy of notice that the Gaur Brahmins, to which tribe the Tagas are supposed to have originally belonged, are said to have settled in the Punjab about the time of the Pandavas.

est) as Colara or Coolee-land, and the people as Colaurians." He thinks the original form of the name applied by the northern Indians to the aboriginal people was *Kola* or *Kolar*. With some tribes the *l* would become *r*, and thus Kaura would be equivalent to Kola, and the Kauravas and Kolarians would be the same race. We have already seen that the black, thick-lipped and broad-nosed Kauras of Chota Nagpur claim to be the descendants of the Kauravas of antiquity, and if this claim is allowed, no objection can be made on physical grounds to any other tribe belonging to the Kolarian stock being granted the same origin. It is evident that the dark-skinned peoples of upper India at one time occupied a much more important position than they do at present, and some of the facts referred to above would seem to favor the contention that Gautama, the founder of Indian Buddhism, belonged to their stock. Thus the opposition between the Hindus and the Buddhists, which led to the forcible expulsion of the latter from India, may have had a racial as well as a religious side, and possibly many of its features were incorporated into the great Hindu Epic, the Mahabharata, which deals in its primitive portion with the conflict of the invading Aryans with still earlier settlers in north-western India, possibly belonging to the same stock as themselves, although allied with their darker aboriginal neighbors.

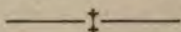


### EXCAVATIONS AT GATH.

The Turkish government has granted the Palestine Exploration Fund a firman to excavate over an area of ten square kilometers, and the region marked out for the operations is on the borders of Shephelah, or old country. It was found that three promising sites for excavation, viz.: Tel Juderideh, Tel Zakariya, and Tel-es-Safi, could be brought within the limits of the permit. On October 26, 1898, work was begun at Tel Zakariya by Dr. Bliss and Mr. Macalister. It is a hill rising abruptly 50 feet above the Vale of Elah, and is 1,050 feet long and 450 feet broad. Dr. Bliss found on the top of the hill the walls of a fortress, to which six towers had been added at a later date. A large part of the area enclosed by the walls has been excavated down to the rock. It has been proved that the fortress had been built after a considerable amount of debris had accumulated on the mound, possibly in the Jewish period.

The fortress was simply an enclosure for protecting houses within it, and the dateable objects range from pre-Israelite to late Jewish times, with a small proportion of later objects. It appears to be probable that the place was inhabited when Joshua conquered the land; that it was fortified in Jewish times; that it was occupied until a later Jewish period, and that during the Roman period there was a brief occupation, after which

it appears to have been deserted. Interesting discoveries have been made, which prove not only that it was the site of the Biblical Gath, but that it contains a record of many periods.



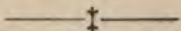
### HERODOTUS AND PALMYRENE INSCRIPTIONS.

BY JOSEPH OFFORD.

M. F. CUMONT has recently in the "Revue Archeologique" made an interesting correction of a passage in "Herodotus." It is in Book III., page 8, wherein, when speaking of some Arabian deities, the "Father of History" names two of them as Orotalt and Alilat. The first title M. Cumont proves should be Obotalt, and does so upon the following grounds:

Tertullian, when also referring to Arabian gods, says: "They have two, named Obodan and Dusares." The changing of the *t* into *d* in transcribing the Semitic name (Obotan) by one or two different authors, is quite common. We see it frequently in writing the name of the Syrian deity Adargates, and Atargates. The difference of termination of *an* for *lt* (ΛΤ) is produced by a common and easy confusion in uncial writing.

Now, there is a deity known in the Palmyrene inscription as "Obodat," or he may have been a deified king, for several monarchs are named Obodat. (See M. Clermont Ganneau's "Recue d'Archeologie Orientale," II., p. 368.) Stephen of Byzantium and Eusebius speak of Oboda and Obodon. These titles all embody the same deity name, as the Obotalt, which was the name originally written by Herodotus, though his form of the name may be the older specimen of it in regard to its termination, and therefore, perhaps, enable scholars to trace it to its origin.



### EGYPTIAN GOLD.

FROM THE FRENCH OF M. BERTHELT.

[Translated by Charles A. Brasseur.]

In very ancient times native gold was collected from the alluvium. It was usually found alloyed, to some extent with silver. When the proportion exceeded a few hundredths parts the gold presented a whitish appearance and was called *electrum*, or by the Egyptians, *asem*. The act of separating out the silver in order to procure pure gold, was acquired at a much later date. In Lydia, where the first coinage took place, the time cannot be fixed by the analysis of coins preserved in the museums. It was the epoch of Cresus; previously, coins were alloyed with silver.

The process employed for separating the two metals is described by Pliny. It was the cementation of the metal by the dry method in leaves stratified with a mixture of sodium chloride and ferric sulphate. The dissolved silver was eliminated.



nated in the state of a double chloride; the gold remained. This process was employed down through the Middle Ages until the commencement of the Sixteenth Century, when the mints began to operate the separation of the two metals by the wet method, according to the process still in use, and first described in writings dated in the middle of the Fourteenth Century.

The knowledge of these facts, from the presence or absence of silver in a sample, enables us, within certain limits, to ascertain the relative date. The most ancient samples contain silver. Pure samples are usually more modern, though it must be borne in mind that certain native ores of gold are found free from silver, but they are rare.

I have thought that it would be interesting to verify this indication by the analysis of correctly dated samples taken from the Egyptian tombs. The leaves of gold which surround certain mummies are particularly indicated for such a research. My friend and confère, M. Maspero, present director of the Museum of Antiquities in Egypt, has kindly furnished me with suitable samples. The number received so far is too small to allow of ascertaining with precision the date about which gold was first purified completely from silver.

I present the following analysis, as affording some indication:

1. *Leaves of Gold of the Sixth Dynasty.*

Gold.....	92.3	92.2
Silver.....	3.2	3.9
	<hr/>	<hr/>
	95.5	96.1
Organic matter, etc.....	4.5	3.9
	<hr/>	<hr/>
	100.0	100.0

Tin, lead, copper, etc., are absent. Of iron, there is a trace.

2. *Leaves of Gold of the Twelfth Dynasty.*

Gold.....	90.5	90.0
Silver.....	4.5	4.5
	<hr/>	<hr/>
	95.0	
Organic matter, etc.,... ..	5.0	
	<hr/>	
	100.0	

There is no other metal in noticeable proportion.

3. *Leaves of Gold of the Persian Epoch.*

Gold.....	99.8
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Thus, the only pure gold in these samples is of the Persian epoch, when the art of separating gold and silver was known in the Orient. The interval between the two analysis covering centuries, intermediary comparison is impossible.

## KITCHEN MIDDENS ON THE LOWER FRASER.

BY C. HILL-TOUT.

[Extract from the Report to the Ethnological Survey of Canada.]

The archæological remains found in the Lower Fraser district fall very naturally under two heads—middens and burial mounds or tumuli. In treating of the former it will be convenient to divide them into two classes, the ancient and the more recent. The earlier ones are characterized throughout by their abundant external and internal signs of comparative antiquity, and by certain somatological evidence of the presence of a race here during the time of their formation differing radically in important physical traits from the present Salish tribes.

As the older middens do not differ materially from each other wherever found, except in regard to their extent and mass, I shall confine my description to one very large one on the right bank of the north arm of the Fraser, a few miles up from its present mouth. The evidence of antiquity is, in the case of this midden, clear and unmistakable. First, in the growth upon it of an old forest, the trees of which are, in numerous instances, from four to eight feet in diameter, and their annular rings indicate an age of 500 years and upwards. The roots of these trees are embedded in the midden mass itself and have demonstrably grown there since the site was abandoned and given over to nature by its original occupiers. Secondly, in the extensiveness and volume of the midden material which stretches along an ancient bank of the river—which is here some 200 or 300 yards back from the present bank—for upwards of 1,400 feet covering, to an average depth of about five and to a maximum depth of over fifteen feet, an area exceeding  $4\frac{1}{2}$  acres in extent. It is composed of the decaying remains of marine shells, mostly of the clam and mussel kind, intermingled with enormous quantities of ashes, calcined and fractured stones, and other refuse matter, and throughout its entire mass offers unmistakable testimony of extreme age.

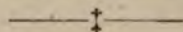
Of the relics recovered from this midden most are simple in make and design, and such as are, with few exceptions, found among primitive peoples elsewhere. I have figured some typical specimens of these in my "Notes on Later Prehistoric Man in British Columbia." No pottery of any kind has been found in the middens of either class; indeed, the ceramic art appears to have been wholly unknown to the aborigines of British Columbia, both ancient and modern. Of stone bowls or basins a large number and variety have been recovered. Some of these are fashioned after the likeness of animals and fish, the bear, frog, and salmon being the favorite patterns. Occasionally the bowl represented a human head with the face on one side of it. Large numbers of barbed and grooved bone spear and arrow points, as well as stone adzes, axes, fish and skinning knives, chisels, scrapers, &c., are found. Some of

these are of the rough "palæolithic" type, others are finely wrought and polished "neoliths." The two are commonly found side by side. The material out of which these stone tools and weapons were made was of various kinds. The fish-knives were invariably of thin slate. The adzes, axes, and chisels were commonly formed from dull green or grey and mottled jade, though specimens wrought from smoky quartz have been recovered. A dark grey or black basaltic rock was also extensively used, principally for spear and arrow heads. The latter were also made from slate, and when so formed were invariably ground into the required shape. These were generally stemmed, but never barbed. A striking feature of some of these slate arrow points is that the edges are bevelled from different sides, as if designed to give a rotary motion to the projectile; but these are not common forms. I have seen but one of this type. A few specimens of obsidian have also been found. In form and variety almost every known type of arrow head will be found represented here.

Stone swords of several patterns were also used by these midden makers. Some of them resemble in general outline the short double-edged sword of the Roman legionaries; others resembled, in cross-section, in a general way, a ship's belaying pin. The ends of the handles of all these swords were pierced with a counter-sunk hole, the boring being done from both sides and meeting about the middle. Through these holes were doubtless threaded the leathern thongs which bound the weapons to their owners' wrists. Bone needles of various forms and sizes, with the eye-hole sometimes in the center, sometimes at one end, are quite common. A few specimens of the pestle-hammer have also been recovered from this midden, though I met with no specimen of the kind in my own investigations. These do not differ in any radical feature from the types found in the later middens of this region. Indeed, I am free to confess that although I hold the more ancient of these middens to have been formed by an antecedent non-Salishan race, the specimens recovered from them do not differ in any remarkable degree from those found in later formations, or from the utensils and weapons formerly employed by the present Salish tribes when we first came into contact with them. But while this is true, it must be borne in mind that we have some types of utensil, notably, the several varieties of the pestle-hammer, which are peculiar to, and probably originated in, this region; and these may very well have been borrowed by the Salish from their dolichocephalic predecessors. If this view is not well founded, then it would appear that we have in these ancient middens very clear evidence of the antiquity of the Halkōmā'lem tribes in their present habitat. But this I seriously doubt. The evidence gathered from a comparison of their tribal customs, beliefs, and speech, especially of the latter, makes it impossible to believe that they could have occupied



their present quarters as separate and distinct tribes since the days of the early middens. For by the most conservative calculations the lower strata of these old middens, such as that I am describing, could not have been formed less than a thousand years ago; and from what we know of the rate of dialectic change, phonetic decay and the evolution of new forms in human speech, and particularly in barbarous and unlettered tongues, less than one-half of that period would have brought about such dialectical differences in the language of the outlying and distant tribes as would long ere this have made them mutually unintelligible. Yet such is not the case. The *Halkömé'lem* tribes from Yale to the Fraser's mouths and down the Sound all speak what is practically a common dialect. This fact makes it impossible to believe that these tribes have occupied the delta for any very considerable period, and yet everywhere throughout the whole area these ancient middens, many of them acres in extent, abound.



#### THE CARIBS.

When Columbus landed at Haiti on his first voyage, he heard much of the warlike people to the south, who ravaged the more peaceful natives of Haiti and the northern islands. But it was not until the end of 1493, on his second voyage of discovery, that he landed at Guadeloupe, the stronghold of the Caribs, and first beheld this cannibal race. Washington Irving, in his "Life and Voyages of Christopher Columbus," describes the horror of the Spaniards when they found human limbs suspended from the beams of the houses, as if curing for provisions.

The whole archipelago, extending from Porto Rico to Tobago, was under the sway of the Caribs. They were a warlike and unyielding race, quite different from the feeble nations around them. Of the thousands of these fierce people who dominated the Caribbees four centuries ago, only a few hundred descendants remain. In the northern part of St. Vincent a few Caribs are still left, and in Dominica are a few others.

The Caribs were also found in Guiana and along the lower Orinoco. Spain condemned them to slavery, but they were not much molested by her because of their fierce character. In later years the English and French fought long and bloody wars with them. St. Vincent became their last stronghold. In 1796 England transported 5,000 Caribs from St. Vincent to the island of Ruaton, whence many of them passed to Honduras and Nicaragua.

## THE FIVE BREATHS.

[A Summary of an Article in the Journal of the American Oriental Society, Vol. XXII., 1901.]

There are five breaths: (1) that which goes out or up, "PRANA"; (2) that which goes down, "apana"; (3) that by which these are supported, "vyana"; (4) that which belches forth, "udana"; (5) the breath which is ever present, or in reality the life, "samana." These five breaths have their seats in different parts of the body: the seat of "prana" is the heart; of "apana" is in the bowels; of "udana" is in the throat; of "vyana" is in the navel, and "samana" abides in all the members, its functions is in the veins. The "prana" series, belongs to the seven openings of the head. The "udana" is the soul, or breath which reaches the crown of the head, so it is located in the throat. The "vyana" has its function in the veins.

The five breaths are personified and represent the different forms of life and the cosmic force. (a) The sun rises, and represents the external "prana"; (b) the soul which is in the earth and supports the "apana" of man; (c) the soul, or breath, which is between the sun and the earth, is "samana"; (d) the fire element is "udana," a man who dies has his fire extinguished; (e) the soul or life which is everywhere present in the universe, is "vyana." There is, also, a correlation between the breath and the activities of Nature. The sun is the "prana" of Nature. The idea is based on this, that the sun is the eye of the universe, the eyeball in the sky; the "apana" is the activity or divinity of the earth; the "samana" is identified with the navel, and is correlated with the microcosm; the "vyana" emphasizes the persuasiveness of the cosmic force, it is the breath of the universe; the "udana" is the activity of fire.

The five breaths are correlated to the five points of the compass: "prana" to the east, "apana" to the west, "udana" to the north, "vyana" to the south, and "samana" to the zenith. The five breaths are correlated to the elements: "prana" to the sun; "apana" to the fire; "vyana" to the water; "samana" to the air in the four quarters, and "udana" to the moon (light). The process is represented by the five breaths. Creation started with space. The breath goes out and rises. This is "prana," the wind. The ether became water, breath draws in, and so it correlated to "apana." "Prana" goes upward and forward, and "apana" goes downward and backward, as the breath goes up and down. "Vyana" is the breath which goes in all directions; "udana" is the departing wind; "samana" is the activity which produces assimilation of blood. The activities of the body are defined by the five breaths: "prana" is the ordinary breath, and aids in swallowing food; "udana" is the breath which gives speech; "samana" is the breath which digests the food; "vyana" is the breath which diffuses the food and the life through the body; "apana" is the



functional breath of the chest or lungs, and at the same time is the breath that carries the digested food away.

The process of Creation which was represented by the contest between the assuras and the devas and the churning of the sea, with the mountain as a fire drill and bursting forth of the water and the producing of the heavenly drink called "supur." This process is also symbolized by the five breaths. The creating of the fire by "*apana*," the stirring of the waters by "*vyana*," the licking of the waters by "*udana*," the stirring of the fire by "*samana*." The five breaths are symbolized by a bird: (1) "*prana*," or the head; (2) "*vyana*," the wings; (3) "*apana*," the tail; (4) "*samana*," the back; "*udana*," the body.

These five breaths, which are thus personified by the Hindus and are so significant in their analogies to the processes of creation and the operations of the body, are very important, for the same ideas are held by the aboriginal inhabitants of America in a shadowy way, and are represented by about the same symbols, though they are spirits or divinities rather than breaths. To illustrate: the Dakotas and other tribes held that there were four spirits or divinities, which were situated at the four quarters in the sky, and sent out the winds as the body sends out the breath. Among the Pueblos there were six quarters, the four quarters and the zenith and nadir added. The same divinities are represented by the bird; there are shell-gorgetts among the stone graves which represent four birds' heads as projecting from a looped rectangle. The birds are divinities of the air. There are also spiders with four legs, which represent the water. There are four serpents which, perhaps, also represent the fire, or the water. There is the cross with four arms which represent the winds and the points of the compass. There are gorgets with three crescents, and four crescents, which represent the moon. There are others, which have four circles, which represent the four quarters and the four elements. There are gorgets which have small circles, some of them five and some of them thirteen, which represent the sun and the seasons and the months in the seasons.

The primeval breaths are the activities of Nature.

The supernatural powers were regarded as the spirits of the natural, every object had its spirit. The forms and phenomena of Nature were themselves spirits. The lightning and heat or fire were spirits. It was a spirit which burned the sacrifice, and which sent the arrow to its mark. The natives spoke of the "Spirit of Heaven," rather than of God, or the Deity. The force which enables the animate being to breathe and act was the same as that which sleeps in inanimate objects. The spirits were not moved by human passion. They had no moral nature. The spirits were feared as demons, rather than worshipped as powers. The spirit of the sky, the spirit of water, and, e-peci-



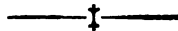
ally, the spirit of the underground world, were the ghosts of the dead and the demons of the night.

This was the conception among the early Babylonians, as well as among the Mexicans and the Hindus. The Sumerian temple of Nippur was in honor of the lord of the ghost world, the ruler of the ghosts and demons. Succeeding to these animistic beings, were the animal-gods, or totems, which were very common in America, and existed among the Arabs.

Among the Semitics, the personal god appeared from the first. The human family had its counterparts in the heavens. There were gods and goddesses, and the divine pair and a son. The gods stood at the head of all creation. There were as many of these Baals as there were families or groups of worshippers. Each clan or tribe had its divine pair. These were identified with the sun and moon.

The religion among the Greeks was a family religion. Each house had its god. Each god protected one family. Every family had ceremonies which were peculiar to itself. The father was the sole interpreter and priest of the family religion. He could teach it to his sons, as the rites and ceremonies and forms of prayer were a patrimony. The father gave the right to the son to continue the sacred fire and to offer the funereal meal. The fire was something divine. They made offerings to it. They believed it to have power, and asked its protection. They saw in fire and life a beneficent god, who protected the house and the family. In the presence of danger, they sought refuge near the fire.

The Hindus, like the Greeks, regarded the dead as divine beings, who enjoyed a happy existence, but their happiness depended upon the offerings made by the living. If the funereal repast ceased, they left their tombs and became wandering shades. The tombs or the temples were the abodes of these divinities. The Greeks gave to the dead the name of "Subterranean Shades."



## THE STORY OF GILGAMES.

[Selected from the Proceedings of the Society of Biblical Archaeology, Vol. XXV., 1903.]

Gilgames was one of the most celebrated heroes of Babylonia, and also, evidently, one of the most ancient of the kings of that region, the seat of his dominion being Erech, or, as it is called in the inscriptions, *Uruk supuri*, literally, "Erech of the fold," probably so named because of some special enclosure which surrounded it. He was renowned for his wisdom and knowledge, no less than as the royal traveller who had undertaken a journey to find out the secret of life and death, which seems to have been the subject of the legend which gives these details. Naturally such adventures as he went

through could not be those of a mere man, and the Babylonians therefore believed him to be two parts divine and one part human, as is stated in the legend first published by the late G. Smith. According to Jensen's translation of the first tablet of that series, he was created or formed by the goddess Aruru, the chief divinity of Ya'ruru, which seems to have lain near Sippar, and to have formed a twin city with it. As he was great and renowned, the goddess was requested to form another like him, and it was prophesied that the twain would compete with each other, apparently for the advantage of the city of Erech, in friendly rivalry. Forming in her heart a likeness of the god Anu (one of the deities of Erech), and washing her hands, she pinched off a piece of clay, which she threw down on the ground. The result was the creation of Ea-du, a warrior, one of "Ninib's host." His whole body was covered with hair, and the hair of his head was long, like that of a woman.\* He lived, like a wild man, with the beasts of the field, eating herbs like the gazelles, until one day a young hunter saw him, and, suspecting him of divers pranks to his own disadvantage, went and told his father. The latter advised him to report the matter to Gilgames, which he did, and measures were taken to entice this wild man to Erech. With the huntsman was sent a woman, who tempted Eadu with her charms, and having brought him to her feet, thereafter the wild creatures with which he lived became afraid of him, and ran away. This being the case, he returned to his tempter, who flattered him, telling him how fair and like a god he was, and inviting him to come to Erech, the glorious city, where was the temple of Anu and Istar, and the abode of Gilgames, the great hero, rivalling even himself in wisdom and strength. Roused at the thought of meeting one with whom he was so evenly matched, Ea-du decided to go to Erech, there to meet the great hero of the place. In the meanwhile the Erechite ruler has two dreams, which he relates to Rêmut-Bêlti, his mother, who interprets them as referring to Ea-du, who is to be his friend and future helper, and when he goes to meet the latter, he resolves to tell him of these visions which referred to him.

The fragmentary state of the text in the passages which follow make the narrative very uncertain just here, and the next event of which the narrative treats, seems to be the expedition Gilgames and Ea-du made with the object of killing the Elamite tyrant Humbaba, a mighty warrior, greatly to be dreaded, who lived in the midst of a forest of cedars. So dangerous, in fact, was the undertaking, that the mother

\*In the legend first published Gilgames calls Ea du his "young brother," probably because they were both of divine origin. His being described as a "hairy man" reminds one of Esau, and in the love which Gilgames bore for him we have a Babylonian prototype of David and Jonathan. It cannot be said, however, that the Bible has plagiarized in either of the cases.

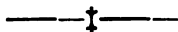
Gilgames, to all appearance, counselled against it. Notwithstanding this, however, all seems to have ended happily, and, after many adventures, the tyrant was ultimately deprived of his head. In consequence of this and other successes, Gilgames would seem to have celebrated a kind of triumph on returning to Erech; and when Istar, the goddess of the city, saw him in his royal clothing, with his tiara on his head, she wished to espouse him. This, however, was not to the taste of the hero, who, notwithstanding that she was, with Anu her father, the chief goddess of the city, immediately began to reproach her with her treatment of Tammuz, the husband of her youth, and her numerous other favorites, all of whom had reason to rue their ill-luck in attracting the attention of the goddess of love. The sequel has been frequently related. Angered, the goddess mounted up to heaven, and asked the help of her father Anu and her mother Anatu, the result being that a winged bull was assigned to her as her champion. Even against this divine animal, however, were the two friends successful, and after they had killed him, Ea-du cut off a portion of his body, and threw it at the goddess in scorn, threatening, if he got hold of her, to make her like her dead champion. Istar and her devotees then made lamentation over the portion of the bull which had been cut off, whilst Gilgames called the cunning workmen of his city to look at the enormous and beautiful horns of the divine animal which he and his friend had killed. These objects were of lapis-lazuli, and the two together held six *gur* of oil, which amount the hero gave to his god Lugal-banda for ceremonial purposes, retaining the horns themselves as trophies. His people again acclaimed him as a hero, after which he held joyful festival in his palace.

Of their further adventures the tablets have preserved only fragmentary remains, and where the text again becomes fairly comprehensible, Ea-du has fallen into a trance, from which he does not awaken, and to all appearance this trance is in reality death. On realizing this, Gilgames seems to have set out to find some means of getting his friend restored to him, and in his quest he travels far and wide. From the remains of the text as restored by Jensen, we see that he meets with various people, who all notice his care-worn and weather-beaten appearance; and if the completions be correct, as seems certain, they all speak of it in the same words, more or less. Whenever asked, he answers that it is on account of his friend, the panther of the plain, his "younger brother," with whom he had ascended mountains, had seized and slain the divine bull, had smitten Humbaba dwelling in the cedar wood,—the friend with whom he had killed lions, and performed other deeds. His fate had come upon him, and on that account Gilgames had bewailed him six days and (seven) nights, when the fear of death came upon him, and he fled, running over the plains along a distant road, and the thought came over him: "Shall I not



(also) lay me down like him, and not rise up again to all eternity?"\*

The death of his friend had to all appearance awakened in his heart that question which has disturbed so many, and upon which diverse opinions prevail even now, and will do, perhaps, as long as there are men on the earth.



### MUMMIED CROCODILES

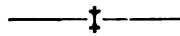
[Selected from "The Periodical," March, 1903.]

The Fayûm was the nome of the crocodile-god Sobk, who under various forms and names was worshipped in every village that could boast a temple of its own. In the Ptolemaic period, even after the extensive reclamations from Lake Moeris, crocodiles must have still frequented the district in great numbers, and a pond or small lake full of the sacred animals was no doubt a common feature of the local shrines. An interesting account of the sacred crocodiles of the great temple of Sobk at Crocodilopolis, the capital of the nome, is given by Strabo, who came to the Fayûm soon after the Roman conquest, and of whose visit a curious anticipation is to be found in a papyrus of the present series dealing with the preparations for the reception of a much earlier Roman tourist. The later Ptolemaic and early Roman period was that in which the practice of mummifying and burying sacred animals was at its height, and the cemetery of the sacred crocodiles of Crocodilopolis itself was found at Hawâra in 1888 by Prof. Flinders Petrie. These, however, yielded no antiquities of importance, and the crocodile-mummy as a source of manuscripts was not known until we accidentally discovered this new method of obtaining them at Umm el Baragât. \* \* \*

On January 16, 1900, one of our workmen, disgusted at finding a row of crocodiles where he expected sarcophagi, broke one of them in pieces, and disclosed the surprising fact that the creature was wrapped in sheets of papyrus. As may be imagined, after this find we dug out all the crocodile tombs in the cemetery; and in the next few weeks several thousands of these animals were unearthed, of which a small proportion (about two per cent.) contained papyri. The pits were all quite shallow, rarely exceeding a metre in depth, and the crocodiles were sometimes buried singly, but often in groups of five or ten or even more, and with their heads pointing generally to the north. To the votaries of Sobk the mummification of his sacred animal must have been a labor of love, for besides quantities of the full-grown specimens, tiny crocodile-mummies were found, in addition to numerous sham ones.

\* *Anaku ul ki sasu-mâ anellamma: û lâ atebbâ dâr dâr*, as restored by Jensen, from a comparison of the passages where the phrase occurs.

which had the shape of a crocodile, but contained only a bone or some eggs, or sometimes merely a figure of a crocodile in stone or wood. The ordinary system employed was to stuff the mummy with reeds and sticks, which was covered with layers of cloth, generally arranged in the check pattern with diminishing squares, which is characteristic of Græco-Roman mummification. When papyrus was used, sheets of this material were wrapped once or several times round the mummy inside the cloth, to which the outer layer was often glued; and a roll or two would frequently be inserted in the throat or other cavities.



### THE ASHERAH.

BY WILLIAM HAYES WARD.

[Selected from the "American Journal of Semitic Languages and Literatures."]

Students of biblical archæology are agreed that the Asherahs, the "groves" of the Received Version, were wooden columns, which were emblems of gods, or accessories to worship; but I believe no careful study of these asherahs has been made from the archæological side. It has hardly occurred to students, in their careless observation of a pillar on a coin or a seal here and there, to differentiate these asherahs, and try to find out whether they differed and how they differed from each other, and how the several gods were represented. It is a partial study of this subject that is proposed here.

We are familiar with the representation in Roman times of certain gods of country life by columns. They are generally called *Hermæ*, because *Hermes* was often so represented in this cheap way. The body was a single column, square or round, with no human form, except often the phallus, and it was surmounted by a bearded head of the god. It is such a column that is referred to in one of Virgil's *Eclogues*, where *Thyris* vows to *Priapus*, "keeper of a poor garden," that if the produce of the flocks allows, his little marble image shall be exchanged for one of gold.

At the time of the composition of this Hebrew literature which mentions the asherahs, the representation of the columns as altars or as gods was frequent in the art of the neighboring countries. They may be called indifferently columnar altars or columnar idols. Almost every one of the thousands of Assyrian cone seals contains the representation of two or more of these columns. There are certain standard styles of them, but there is very little in their design to indicate to which gods the several columns, or asherahs, belong. There was such a close relationship between the Babylonian (or Assyrian) gods and those of the Mediterranean coasts that, if we can distinguish the columnar emblems of the gods of the Euphrates valley, we shall be able to do the same for those of the Phœnician and Syrian regions.

Now, our clue to these has to be gained from those inscribed bas-reliefs, or steles, which contain a number of these emblems. Some of them are bas-reliefs of Assyrian kings, with a number of emblems near the king's head. Others are funereal tablets containing the symbols of the gods. The larger number are what are called boundary stones, or kudûrus, which are really the records of deeds of grants of land, by kings, to men of note. There is a long inscription which describes the grant, concluding with a curse to be denounced by the gods figured on the stone on anyone who shall alienate the grant or remove the landmark. The upper part of the stone, or one side of it, is devoted to the emblems of these gods. A dozen or two of these boundary stones, from Babylonia or Elam, have been found, and their inscriptions and designs published. \* \* \*

The usual columns representing gods are thus distinguished and identified by the bas-relief of Bavian and the boundary stone of Susa. They are Ea, Ramman, Marduk, Nabu, and probably Nergal. The other emblems do not now concern us, and a number of them, owing to the illegibility of the epigraphs, are still uncertain. We may fairly presume that such columns as these, familiar in use and art from Elam to the Assyrian border, and from probably 1500 B. C. to 200 B. C. or later, were well known, with their variations, over Phœnicia and Palestine, and were objects of worship. Made of wood, they would not be preserved, and the representations we have of columns are chiefly of twin columns of a different sort, such as mazzebeth, in temples and figured on small coins. The column, or asherah, mainly in use would have represented the one sun-god Marduk, or Baal, under his various forms, and would have been easily cut in wood. Nine-tenths of the cone sea's with figures of columns have the two columns of Marduk and his attendant Nabu, both easily engraved on stone or cut in wood. The worship of Ea or Nergal we should hardly expect to be usual in Phœnicia or Palestine; but that of Ramman, the Syrian Adad, would be familiar. His emblem, the thunder-bolt, a zigzag trident or bident on a column, is not at all frequent on cone seals, and could not be conveniently cut on them, as it could not be hewn in wood. It would require a metal attachment on a wooden column. At present we must satisfy ourselves with the conclusion that within the extent of the Assyrian empire the asherahs represented individual gods, and the presumption that such was the case with those of Palestine in the time of the later Jewish kingdom. The various conjectures are far from probable which make the asherahs symbols of Ashtoreth, or of a supposed goddess Asherah, or give them a phallic origin; or even that of Robertson Smith, that they are a relic of earlier tree-worship.



## EDITORIAL.

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### THE EARLIEST HOME OF THE HUMAN RACE.

There are two views of the earliest home of the human race, and of the locality from which all the migrations started, one of which has come from the study of prehistoric archæology, and the other, from the study of history, traditions and architectural remains.

According to the first view, the starting point was somewhere in Europe, and the caves were the earliest habitations; according to the other view, it was, in southern Asia. In fact, man's earliest home was in a region where the climate was mild, and where vegetation was abundant and every thing seemed like a garden. This is the traditionary view, and one which in reality comes from the sacred scriptures; but it is also the view which is receiving the assent of a large number of scientific men, and is confirmed by the discoveries that have been recently made in the valley of the Tigris. It is remarkable that, after the effort had been made to prove that the starting point was in Europe and that the migrations went in the other direction, at last, the original view held by the ancients, and which was given by the sacred scriptures, should be set back again into its place, and we should find that the spirit of inspiration has given to us the correct account.

It may be held by some that this only proves the modern date of the Books of Moses, and that the Bible only reflects the advanced thought of the people who lived, perhaps, even after the time of the exile. There are, however, so many correspondences between the scripture account and the ancient mythologies, that we are led to believe that this view of the early condition of mankind and the locality where the first pair had their home, really embodied the facts which were known to all the nations of the East.

This is the point to which we will call attention, but in doing so, we shall draw the proofs from many sources.

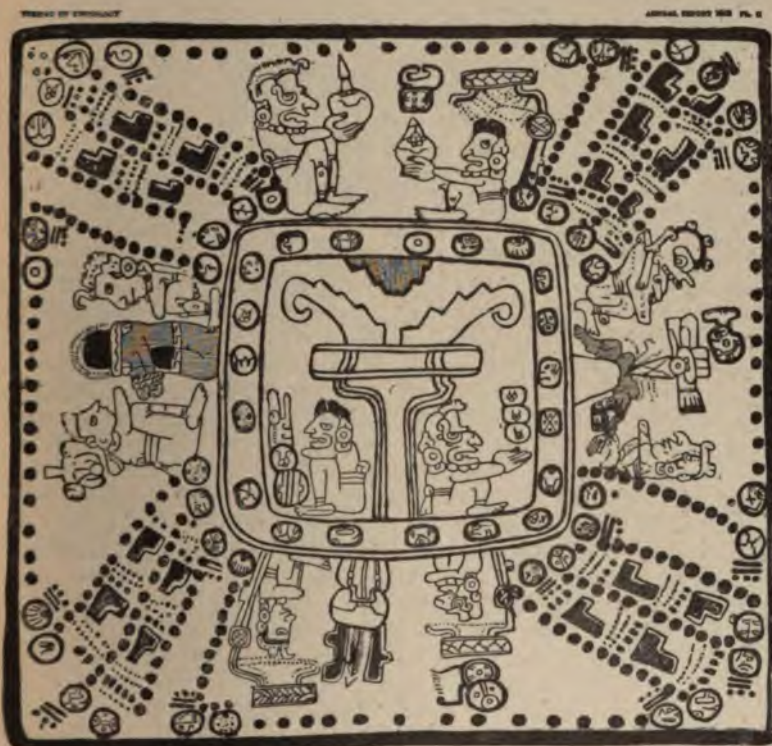
I. According to the Greek mythologists and poets there was a garden called the "Garden of Hesperides," and it contained a tree which bore golden apples and was guarded by the dog Cerberus and the many-headed dragon, although the location of the garden is not definitely given. Various theories have been advanced in reference to this point, for according to some, it was in the remote western part of Africa, in Lybia, or on Mt. Atlas; according to others, it was in Cyrenaica, the





situated in Central America which was entirely separate and distinct from all historic nations, and yet the symbol of the tree is as plain in its significance as the story itself, and can be accounted for only on the ground of a transmission from distant regions and a survival throughout all changes.

II. Another confirmation is gained from the study of the ancient traditions of the East. These have been transmitted



TREE IN THE MAYA CALENDAR.\*

to us by the various historic nations,—the Phœnicians, Assyrians, Babylonians, Hebrews and Greeks,—and echoes of them by the tribes of the American aborigines.

1. The event which is the most prominent in the traditions of the world, is the Deluge. This seems to have been local, though it was so early that the tradition of it was preserved by all of the nations of the East before they separated. Each nation has a different version of the story—the Babylonians,

\* The chart is taken from Calendar of the Mayas, and represents the yearly sacrifices. The dots and circles at the corners give the number of days in the weeks; the circles in the band around the tree, the number of days in the month; the figures at the side show the four sacrifices; these contain also symbols of the elements, the earth, air, fire, and water. The seated figures, beneath the tree, represent the Divinities, and yet they are significant of the first pair.



the Hebrews, the Greeks, the Chinese, the North American Indians, the inhabitants of Polynesia—but at the same time one that contains the same facts. According to the Hebrew tradition, the ark was filled with the various animals—domestic and wild,—Noah and his three sons and their families, and after forty days of rain, it lodged among the mountains of Armenia; the animals were let out, and Noah made sacrifices and, with his household, began to people the world anew.

The Tower of Babel, according to the tradition, was erected by the descendants of Noah; but the confusion of tongues put an end to the work, and the people were scattered to the various parts of the world. It is worthy of notice that recent discoveries have brought to light the fact that there were two or three great nations represented at this time in the valley of the Tigris, the Accadians, who were the ancestors of the great Turanian race; the Mineans, who were, perhaps, the representatives of the Papuan and Hamitic races, and the Hebrews, who represented the Semitic race; and the explanation of the event, is that the nations spoke different languages, and the confusion of tongues was owing to this circumstance. A supposition is that the Accadians went northward, and ultimately established the great Chinese Empire; the Mineans went westward and became the earliest inhabitants of Arabia; but a large proportion of the Semitics remained in the valley and established the Babylonian and Assyrian Empires.

The story of the Flood is not confined to the scriptures, or to mythology, for a tablet was discovered in the depths of a pyramid in Babylonia, by Mr. George Smith, which gives the Babylonian version written in the cuneiform language, and evidently very ancient. This Babylonian version lacks the simplicity and beauty of the scripture record, and yet it contains the same facts. The Hebrew narrative makes no definite mention of Noah's home, but it harmonizes with the statements of the Babylonian story, and admits the possibility that Babylonia was the locality. There is one other strange confirmation: it is found in the fact that mountains surround the valley of the Tigris, those in Armenia being the nearest. The accounts disagree as to the landing place of the vessel, and yet the cuneiform narrative confirms the Hebrew story. It may be objected that the art of ship building had not reached so great perfection, as to admit of the building of so large a vessel, but all the accounts agree in substance on this point, and make it apparent that ship building, as well as pyramid building, had become common.

The Babylonian seals give the idea that wheeled chariots were in use at a very early date, though after the time of the Deluge, for the god Marduk, who was the chief divinity of the Babylonians, is represented as riding in his wheel chariot, with a spear in his hand, and charging at the dragon.

2. There are other traditions which confirm this same point.

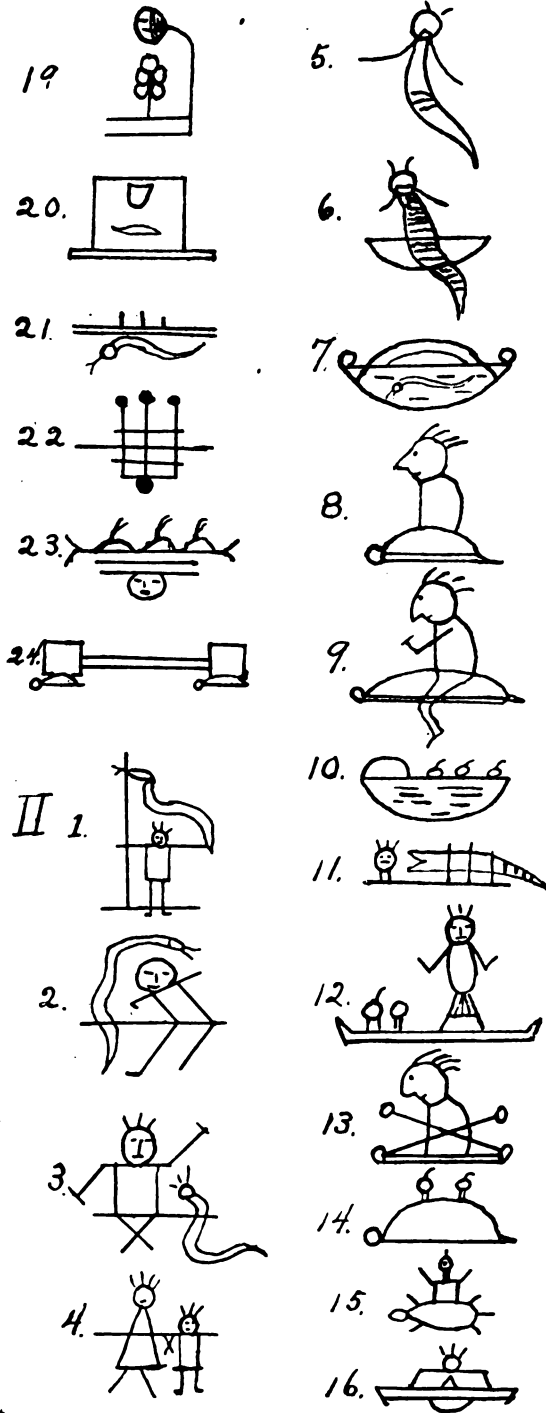
The most interesting one, is that concerning the contest between the two brothers, Cain and Abel. This has been explained as referring to the contest between the shepherds and the agriculturists, this interpretation being sustained by the fact that Cain went out and built a city. It is singular that the story of the two brothers is common in all parts of the world. In some places it represents the contest between the east and the west; in others, it represents the conflict between the various elements, and is a personification of the Nature powers.

The building and founding of the city of Rome is attended with the story of the two brothers, the younger of which was slain by the older. It is a remarkable fact that a hut-urn is preserved at Rome, which represents the shepherd's hut in which the two brothers found refuge after they had been nursed by the wolf in the forest. These are reminders of the three conditions of society: the wild life, the shepherd life, and the agricultural life; all of which were followed by the founding and building of cities. Tradition everywhere proves that there was as slow progress of society through different stages in the East, as may be found in the West. The history of mankind has everywhere been attended by the same results.

There are certain details about the story of the Flood and of the confusion of tongues, which are difficult to account for, yet the event is confirmed by the monuments, as well as by tradition. First, the very tower, or temple, called Ziggurat, has been discovered at Nippur, on which tradition shows the confusion of tongues occurred. Second, the tablets, which show domestic oxen at the watering troughs, and horses attached to war chariots, show that domestic animals were common in Babylonia at an early date. Third, the introduction of horses into Egypt, and of horses and oxen, and fruits and grains, among the lake-dwellings proves that they were introduced from the East. Fourth, the fact that the valley of the Tigris is the only place where the remains of the Stone Age have not been found, proves that civilization first prevailed here. Fifth, the fact that the story of the ark has been preserved among nearly all the nations of the earth, proves that their starting point was in this traditional spot, though the details of the story varies, according to the locality and the social condition of the people who hold it. It is remarkable that even in America, the story of the Flood is very prevalent, but it varies among the different tribes. The wild tribes of the east have one version; the civilized tribes of the southwest have another, and the tribes of the northwest, still another, each of them having their own method of perpetuating the story.

3. It is interesting on this account to examine the picture-writing and the symbols still in existence among the American tribes, and see how closely the story contained in them corre-





sponds to that which comes to us from the far East. The Iroquois and Delaware have the bark record called the "Red Score," upon which is recorded the story of Creation, the Temptation, the Deluge, the Rescue, or survival from the Deluge, and the re-peopling of the earth, in which the chief divinity called Manabozho serves the chief part. This has been explained in the book on "Myths and Symbols," and a cut which represents a part of this bark record is given here, so that the reader may study it, and see how it corresponds with the story given in the scriptures; the imagery being just such as an uncultivated people would be likely to understand and appreciate. The same story is contained in the Calendar Stone of Mexico. In



the center of this stone we find symbols representing the four periods of Creation; one of which was after the world was destroyed by the flood. There are other pictographs in America, which represent Noah and his family in the ark, at least, such is the interpretation given to the pictures by those who are familiar with them.

There are many other traditions of the Flood which furnish proofs that the different races must have once started from this central point. The Phœnicians, the Greeks, and the Hindus, all have the same story.

III. There are many other proofs of this same point, among which we mention the origin of the different alphabets. It appears that the Babylonians had one style of writing—the cuneiform; the Egyptians had two styles—the hieroglyphic and the demotic; the Phœnicians, the Hebrews and the Greeks had the phonetic alphabet; the Chinese had a monosyllabic style of writing, each character containing a word, made up of a combination of symbols or characters. The Phœnician alphabet is the one most relied upon to illustrate the progress of the civilization of the world, and especially the progress of architecture in the Old World. In this alphabet we find pictographs which represent the earliest form of the house, as the letter B, or Beth, signifies house, and the very shape of the primitive house or tent, with the open door and round roof, is given by it. The letter D, or Daleth, signifies the door, and represents the triangular opening to a tent. The two letters here illustrate the difference between the door of the tent and the door of the house. The letter E, with its bars horizontal and upright, represents the window of a house. The Phœnicians are said to have borrowed their alphabet from the Egyptians and transmitted it to the Hebrews, though Cadmus is said to have been the inventor of the alphabet. The shape, however, of the Greek and Hebrew letters show that they were invented after the people had become familiar with the different parts of a house, and after they had given up the hut for the frame house.

There are pictures of houses on the rocks of Babylonia, which show that the earliest houses there, were conical in shape, and resembled the conical huts which are still common among the wandering tribes of Tartars and other Northern people. They also resemble the conical huts found among the North American Indians; whereas, the house which is represented by the Phœnician alphabet, is that which was common among the Egyptians at a very early date, for it had a hemispherical roof and straight walls. All early houses were constructed out

The cut on the preceding page represents the story of Creation under the figure of an arch, which is followed by a picture of the Creator and the divisions of the land and sky, the creation of the sun, moon and stars; afterward the creation of man and woman. An evil Manitou appears under the figure of a serpent. The first pair are at first happy, but the serpent tempts them and brings a great flood. Finally, Manabozho, the strong white one, appears and brings deliverance; the water ran off the earth, the lakes were at rest, all was silent, and the mighty snake departed. See "Red Score," by D. G. Brinton.

of bent poles, or of adobe, but the houses of the Babylonians were constructed of sun-dried brick, and with walls of immense thickness.

IV. We are not confined, however, to mere tradition or mythology for our proof that the first home of the human race was in this traditionary spot, for it is written on the very sky itself. It is noticeable that the map of the heavens was familiar to the nations of the East, and this map in itself conveys facts and truths which correspond to the traditions. The Greeks recognized Hercules strangling the serpents; the giant Bootes, with his club; Draco, the dragon; Cygnus, the swan, as well as the Great Bear and Little Bear. The Egyptians recognized the crocodile and the hippopotamus; also Horus strangling the crocodile, and the constellation of the thigh, as well as that of the lion. These constellations were known to all the tribes of the North, and it was a common custom for the people scattered over Europe, Asia and Africa to recognize the same strange figures in the sky. Mr. Norman Lockyer has written of this, and has from it made an argument in favor of the extreme antiquity of the pyramids of Egypt. The stars in Draco were circumpolar about 5000 B. C., but at 2000 B. C. the stars were in Ursa Major, and this accounts for the difference between the Egyptian and the ordinary constellations. The Star map, representing the precessional movement of the celestial pole from 4000 B. C. to 2000 B. C., is given in his work on the "Dawn of Astronomy."

It is a remarkable fact that the North American Indians recognize the constellation of the Bear, and they have a story connected with it, which corresponds to their own habits of life. They do not recognize the great Serpent in the sky, and yet they do recognize the revolution of the Bear around a point in the sky, and make much of this fact. They also recognize the Pleiades, and regulate their feasts and religious ceremonies by its position in the sky. We may conclude, then, that even the people who settled this continent, and who have no knowledge of any other continent and no memory of events which are so familiar to us all, through our knowledge of the scriptures and our familiarity with the ancient traditions, were in reality emigrants from the far East and had their first home in the same place that our ancestors had.

There is another argument furnished by the geography of the heavens. It appears that in the northern sky the constellations represent objects which are familiar to the savages, viz.: the bear and the serpent, but those in the equatorial belt, objects which are familiar to civilized people, the lyre, the chair, the bull and the sickle. The only exception is that Hercules, Bootes and the harp appear in the northern sky. This would indicate that the races separated before the constellations were known.

Mr. Norman Lockyer says: "In all countries—India, China,

Babylonia and Egypt—they use the girdle of the stars to represent the stations through which the sun passed in his course, but this was after astronomy had become familiar to the people. Babylonia being the first or earliest place where the stars were studied. In Egypt the constellations embraced such figures as the crocodile, the hippopotamus and the lion, all of which were wild animals; but they represent boats as sailing over the sky, thus indicating that civilization dawned there at an early date."

No such constellations were known to the natives of America, and would not have been understood, if they were known. On the contrary, the very constellations which are familiar to all have a story connected with them, which is sug-



CONSTELLATIONS IN THE NORTHERN SKY.

gestive of the hunter life which prevailed on this continent. The Indians recognize the figure of a bear, but do not recognize the figure of the Dipper, or the handle of the Dipper; but, on the other hand, they see a little cluster of stars which represents a kettle, and the story is that a little boy attended the hunter, with a kettle in his hand, expecting that the chase would be successful.

V. The history of the East is very suggestive of the early condition of mankind, as well as of the first starting point. It has been an impression with many that history began with civilization highly developed at the start. It is, however, an impression that is not sustained by scripture, or by science. The picture given by the first five chapters of Genesis is one of pristine innocence. The Garden of Eden was the



abode of the first pair, who dwelt at ease, amid the beauties of Nature, and had every want supplied with labor and without care. It is the same picture which is given by poetry, and reminds us of the Arcadia of the poets. The picture externally corresponds to the scenes which abounded in the valley of the Tigris. The streams surrounding the garden, the trees within it, and the mild climate and abundance of fruit and vegetation which formally prevailed in this region, made it a paradise.

The growth of cities and extension of empire developed the resources of the country, but increased the labor and trials of people, as despotism took the place of liberty, liberty, which was the natural inheritance of mankind. The digging of canals and the use of irrigation developed the resources of the country, but increased the toils of the common people, and made the difference between the poor and the rich, the ruled and the rulers, very marked. There was the same sentiment, which afterward prevailed in Peru, and to a certain extent in Central America, that the rulers were of divine offspring, and so were entitled to their power and distinction, though when the people came under the influence of idolatry and the training of the priests, there grew a submission which ultimately became very abject servitude.

It was the influence of religion which led the people to erect their great pyramids and place the Shrine to the Sun Divinity on the summit, and to give power to the priests and to the kings to erect their great palaces, and to dwell apart from the people. It was exactly the same condition which prevailed on this continent at the time of its discovery. The cities became very numerous, and all of them were marked by pyramids and by palaces, many of them surrounded by high walls and wide gates leading in every direction. The evidence is that irrigation was practised, and the entire valley of the Tigris was filled with a teeming population, but all divided into tetrarchies.

The four cities mentioned by the scriptures, are Babel, Erech, Accad, and Calneh. Two of these, namely, Erech and Calneh have been identified with the ruins of Warkur and Nippur. Mugheir has been identified as Ur, which was the birth-place of Abraham. It was the southern most of all the great cities, and was originally a sea port. Like its three sisters, it was the great seat of that form of idolatry which marks the Chaldean period; the moon being worshipped at Ur; the sun at Ellasar, and Bel, or Beltis, at Calneh and Erech, as we learn from the ruined temples. Of the northern tetrapolis, the ruins have been discovered in the mound of Birs Nimrud of Sippara, at Nippur. The pyramids which are found in this region, are signs that idolatry prevailed, for the great Chaldean towers were temples devoted to the sun, moon and the heavenly bodies. The number of stories at Borsippa was seven, corre-

sponding to the sun, moon, and five planets. They were distinguished by different colors. The first, black; the second, orange; the third, red; the fourth, golden; the fifth, yellow; the sixth, blue; the seventh, silver.

What stages of architecture preceded these great cities is now unknown, still the probability is that there was a growth before the days of the Flood, which enabled the survivors to begin where the Antidiluvians left off, for there are pictures of huts on the rocks clustered together, showing that the common people were still retaining the primitive habits and modes of life, after the ruling classes had reached such a high degree of power.

VI. The chronological system also proves the same point. Among the ancient races there were two or three different methods of dividing the year. One of these was apparently adopted by the hunter tribes; another, by the agriculturists, and a third by those who dwelt in cities, and who erected the temples and pyramids, each one having a different system of astronomy, or rather, astrology. In the primitive or prehistoric age, the polar star, or the north star, was the center around which the heavenly bodies revolved, and it was supposed to be the dwelling place of the creating power. It was at this time that cities were built up in the valley of the Tigris and the Nile and nations began to appear in China, in India, in Arabia, in North Africa on the borders of the Euxine, in the islands of the Mediterranean, and as far away as the North Sea.

There were also cities in America, and tribes in Central America, and tribes scattered through the interior of the continent, each one of which had a calendar system which was best suited to its own purposes. The study of comparative chronology has not gone far enough for us to draw any final conclusions, but we may say this, that there was no unity among the nations, for each nation had priests, or medicine men, who were learned in the science of astrology, and who gave direction to the religious ceremonies of the people; even controlled the employments, and laid out the cities according to the system which had been adopted; that the pyramids and temples were oriented toward the different points, and the whole arrangement of the buildings, and even the ornamentation of the buildings, were subservient to the calendar system. What is more, each nation and tribe had a special number, which was sacred. The Babylonians taking No. 7; the Chinese, No. 9; the North American Indians, No. 4; the Zunis and the Pueblo tribes, Nos. 13, 7 and 6; the Central Americans, Nos. 4, 5, 13 and 20. The study of these different numbers and the systems connected with them is very suggestive, for it throws great light upon the architecture which arose, and upon the religious customs which prevailed.

It appears that all the ancient cities, many of which are in ruins at the present time, were laid out according to a system,

which involved the study of the heavens, as well as of the earth, and the temples were generally the center of the city, the palaces were near the temples. The number of the cities which were grouped together was the result of the religious system. This furnishes an explanation of the tetrarchy which prevailed in Babylonia, and of the orientation of the pyramid there. It furnishes an explanation of the pyramids of Egypt and especially of the orientation of the temples there. Many of them were used almost as telescopes to catch the rays of the sun at its rising at the time of the solstices, very much as



THE CALENDAR OF THE MAYAS.

the ancient temple of Stonehenge was. We may say also that the ancient cities of America were arranged according to the calendar system. The temple was the chief and central object, and all the roads led to it.

A theory has been advanced by Mr. F. W. Hewitt in reference to the temples in Central America and the calendar sys-

\* The cut represents the four serpents which guarded the sacred year, each serpent being marked by thirteen rings, to symbolize the months. The figures inside of the squares symbolizing the activities of the seasons, and other figures representing the various symbols of the days, the whole making fifty-two years, which was a sacred cycle, the face of the sun in center symbolizing the great Divinity. There is, certainly, no chart or series of symbols, either in India or China, or any other part of the world, resembling it, and yet the idea may have been borrowed from the East.



tem which prevailed there, to the effect that it embodied the same system which existed in India; as the division of the year into thirteen months, which were composed of four weeks of five days each, was exactly the same as that which prevailed in India. This is exceedingly doubtful, still it is suggestive, and may lead to a further study of the ruined cities of both India and America.

One thing we are to notice, viz.: that the serpent symbol embodied the calendar system, for the four serpents arranged around the face and divided into thirteen parts, symbolized the months and days of the year. The calendar stone was so full of symbols, that it became a study for the priests, for all the employments of the people were directed by it.

The sacred year consisted of thirteen months of twenty days each, the months being divided into four weeks of five days each; the secular year of eighteen months of twenty days. Now, it is remarkable that there are symbols or pictographs of trees and serpents and many other objects, which plainly represent the calendar system, and these remind us very much of symbols which prevailed in the far East. Mr. F. W. Hewitt maintains that these symbols were derived from the Hindus, and contain many of the figures and symbols which are common in India, and claims that the Hindu year was divided into months and weeks of the same length as in America, thirteen months forming the calendar year, each divided into four weeks of five days each. The linear measure was derived from the counting of the fingers on the hands, and the length of the hand, fingers and arms, a system which prevailed also in America.

VII. The growth of architecture in the Stone Age is worthy of study in this connection. It has been found that the Stone Age prevailed in Egypt, but that it was marked by the graves of a very rude people, who buried their dead in a circular pit which they surrounded by pottery vessels, but a new age was introduced by a race which erected their tombs in the shape of a house, and called it a "Mastabah." The pyramids were really nothing more or less than a great series of Mastabahs. In Greece there was a Stone Age which continued almost up to the time of Homer. During this age the form of structure of the house was that of a cone, and the form was perpetuated in the tomb of the Mycænian kings. It is noticeable that in all other lands the same form of the hut marked the Stone Age, and was preserved in the tombs of the kings. It is by this means that we may trace the growth of architecture from its early beginnings.

It is remarkable that this kind of conical hut can be put together with the hands without any tools, and without any other support than is secured by the walls, which come together at a point. This is in itself an evidence that the various civilized races grew up out of a rude and primitive condition. It

was by the improvement of tools and the advancement of civilization that the change came, when the nations began to build perpendicular walls, and place upon the top of them timber which should serve as a support for the roof, though the form of the roof might vary according to locality, climate and other circumstances. In a climate like that of Egypt, the roof was likely to be flat. In a climate like that of Greece, with a peak at the top and a projection at the bottom, and held together by its own weight. The next stage would be to place a cornice on the eaves, and an entablature at the front. There was, however, no new mechanical principle involved. The material might vary, the walls might be made of adobe or sun-dried brick, but it was because they were built upright, that they served as supports to the roof.

There came, however, ultimately a new principle, for there was the use of the pier and lintel in making the doorway or opening in the wall. There came also the use of the column



CYCLOPEAN WALL AT ATHENS.

supporting the roof, and the use of the arch in supporting the heavy weight which might be produced by the size of the buildings and by the change of material. Now, the fact that in Babylonia we find the earliest buildings, which are constructed after the pattern of a modern house, with upright walls and openings in the walls, and large rooms within, covered with roofs, and columns to support the roofs, and arches to support the weight, shows that the starting point of architecture was in reality in this very region, which is described as the home of the earliest civilization. We may take a sweep of all the countries surrounding this center, and we shall not find any place where architecture dates back to an earlier period. On the other hand, we find the ruined cities everywhere presenting the same general principles.

Schliemann discovered at Hissarlik a succession of cities; F. W. Bliss found at Lachish a similar succession; Hilprecht found at Nippur that it was a mound made up of many cities; Arthur Evans found the same evidence of a succession of population, and a number of cities built upon the ruins of one another; but in all cases there seemed to have been certain elements introduced from some other source. So far, as has been ascertained the starting point was from the valley of the Tigris. There were, to be sure, at Athens cyclopean walls, which are



not found in the valley of the Tigris. There was a number of walls constructed from burned brick and from stone at Troy.

But in each one of these layers of the mounds we may read the history of many cities which lie in ruins, and think of the succession of people which appeared in this region; yet if we go in either direction from these centers, we soon come to those rude stone monuments which remind us of what the condition of society once was in these distant localities. The same lesson is taught us in our own country, for we need only to go from the great centers to the frontier to find architecture in its primitive stage. But when we go back to the first home of mankind in the valley of the Tigris, and examine the cities which have been brought to light from the depths of the great mounds which have so long remained silent, and find the evi-



VIEW OF THE BABYLONIAN PLAIN.

dence of writing in the libraries which have been opened to view, we are astonished at the record and are convinced that the starting point is just where tradition and scripture have placed it.

These facts show that the earliest home of civilization was in the southern part of the Asiatic continent and near the mouth of the Tigris, a region which is surrounded on all sides by mountains, but was connected by seas and rivers with other parts of the world. Civilization appeared first among the Accadians and the Semitics, and some hold that there was a third race, called the Mineans, in the Arabian desert. The contest which occurred between the Accadians and Semitics at the Tower of Babel, led the first-mentioned to take their departure, and they migrated northward and established what proved to be the Chinese civilization on the rivers which flow into the Pacific.



There was, to be sure, a race in Africa which grew up into a high grade of civilization, and established a great empire on the banks of the Nile, which was entirely different from the Babylonian, and in contrast with the preceding race, whose graves have been recently found; the mountains of Arabia upon the one side protecting them from the attacks of the wild tribes, and the deserts of Africa also protecting them on the other side. There arose, however, a race which belonged to the Semitic stock, who became the navigators and traders of the world, namely, the Phœnicians. They never originated a civilization of their own, but they transmitted it from the east to the west. They, as Mr. A. H. Keane has shown in his remarkable book called "The Land of Ophir," sailed along the coast of Asia, up the gulf of Suez, and finally reached the Mediterranean. It is supposed by some that they opened the mines which have been so recently discovered in Mashonaland and Rhodesia, and established trading stations on the east coast of the Gulf of Suez. This can be said, at least, a Himyaritic settlement was established in southern Arabia long before the days of the Queen of Sheba. Mr. Keane thinks that the Phœnicians gave their art to Crete and Cyprus, and that this served as the beginning of the Mycænian civilization.

The same point is illustrated by the history of civilization everywhere. It was not because certain nations had power to overcome all obstacles, and by their own unaided efforts were able to rise to a high condition, but because their situation was favorable, and especially because the effects of civilization, which had arisen elsewhere, were transmitted to them. Such, at least, was the case with all the civilized nations of the Old World. And we see no reason for making the civilized nations of the New World an exception, even if the evidence of transmission has not as yet been given.

The conclusion which we reach from the study of these various facts, is that the earliest home of the human race was in the very place where tradition and the scriptures have shown it to have been, but it was owing to the separation of the tribes and nations of the earth at a very early date, and through migrations from this very spot, that the world was peopled. What effect this fact may have upon the opinion which may be formed in reference to the first peopling of this continent and the rise of civilization here, will depend upon the preconceived theories; yet the fact that there are so many resemblances between the customs, traditions, habits and styles which prevailed in the far East, and especially in the ruined cities discovered there, and those which are to be found here, cannot fail to give interest to this study.

## HAMMURABI, THE ANCIENT LAW-GIVER.

The history of Hammurabi, the king, whose laws were inscribed upon the column at Susa, is not so new as some may think, for his name is very familiar to the Oriental archaeologists. Mention is made of him in the scriptures, for he was associated with the other kings of the tetrarchy, near Babylonia, in invading the territory around the Red Sea, as the four kings contended with the five in the valley of Siddim. He was defeated by Abraham and his retainers, Abraham having been familiar with the habits of the kings, and so was able to attack them at the time that they were the weakest, namely, after a victory. According to the cuneiform records found in Babylonia, he was afterwards engaged in a desperate contest with the Elamites, who had usurped the power, before the departure of Abraham.

Amraphel was king of Shinar; Arioc was king of Elasar; Chedonlaomer was king of Elam, and Tidal was king of Goiim. Hammurabi, or Amraphel, was really king of Babylon, and after his contest with the Elamites sought to make Babylon, not only the political, but also the religious center of his kingdom. The issue of the war was disastrous to Nippur; its temple was sacked, its statuary destroyed, and all the power concentrated in the temple of Bel Marduk at Babylon.

Dr. Peters says: "I found hundreds of fragments of vases, statuary, and other objects of stone, the gifts of sixty generations and more, scattered about in the temple at Nippur. In one place I found vases and other objects, which had been pounded to pieces. The treasury had been opened, the gifts taken out; gold and silver objects were carried away."

With the establishment of the new kingdom of Hammurabi, with Babylon as its capital, the temple of Ekur in Susa ceased to be the religious center, for we find no trace of any reconstruction of the ancient Ziggurat for 800 years.

Finally the Babylonian power became corrupt. A new power of the Assyrians began to press upon it from the north. Nippur was restored to its ancient religious primacy. The Tel-el-Amarna Tablets found in Egypt belong to this later period, for then the Babylonia was the language of commerce throughout the whole civilized world. The supremacy of Nippur lasted until the middle of the twelfth century B. C. Urgur was the first king of the dynasty, which was established at Ur about 2800 or 2900 B. C. To him belong the earliest ziggurats yet explored at Nippur. Hammurabi comes in between Urgur and Nebuchadnezzar, but was comparatively late in the history of Babylonia, for the reign of Naram Sin, 3750 B. C., and his father, Sargon, 3800 B. C., preceded him.

Brick walls, of three different periods, were found at Nippur, and a ziggurat composed of two stages; one of which was built in the time of Urgur, 2800 B. C. An earlier king of Ur,

sometime about 4000 B. C., scratched his inscription on a block of stone, which was utilized as a door socket by Bur Sin, about 2400 B. C., which possibly Abraham may have seen before he departed from Ur of the Chaldees.

The characteristic bricks of Urgur were laid in three ways first, with ends out; second, on the edge, with flat sides out then, a layer on the edges, with the ends out. It is remarkable that this peculiar style of construction, called the "herring-bone," has been found, not only by Professor Hilprecht in Babylonia, but by Mr. J. D. Bent and others in Mashonland showing that the style was carried by Phoenicians to Arabia and to Africa, and incorporated into the mining towns of that region. A book has been prepared by Mr. A. H. Keane, which describes these towns and the migration of the Phoenicians.

Mr. Keane maintains that trade was carried on by the Phoenicians with India, and that Tarsus was situated in India rather than in Spain. This is an important point, for it confirms the view which has been advanced by the explorers at Nippur, that commerce was carried on between Babylonia and India as early as that time.

Sargon, about 3500 B. C., is said to have extended his empire to Cyprus, Palestine, Northern Arabia and the Peninsula of Sinai. He honored the shrines of Nippur and Lagash with votive offerings, and rebuilt the ancient temple Ekur, or Erech.

Urgur was the great builder of the East. It is possible that he introduced the form of construction of the ziggurat, in imitation of mountains, on the summit of which the gods might dwell; thus perpetuating the original Nature worship which prevailed in prehistoric times.

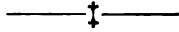
Ur was the seat of a great temple, and was a city of great political importance about 4000 B. C. It was a manufacturing center, as is shown by the great heaps of slag which formed part of the ruins. Both Ur and its sister city, Eridu, were also commercial towns, and took found in the ruins of the latter city, proves an early connection with India. South of Eridu was Sipporah, the "ship city," where the records were buried during the Flood. Both Ur and Eridu were originally located near the sea, but at present they are 120 miles from it. The rate of alluvial deposit has averaged about 100 feet a year from this we find that these two cities would have stood on the shore of the sea about 6000 or 7000 B. C., but the earliest writing dates 4000 B. C.

Hammurabi was a modern king, compared with Noah, the patriarch, but lived about the time of Abraham. The laws written by Hammurabi throw light upon the government of Babylonia, but they do not compare with the laws of Moses. There is no recognition of the one God; nothing said about idolatry, or the observance of the Sabbath, or the common



virtues; but penalties are affixed to specific crimes, as they are in modern statute books.

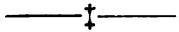
This does not, however, prove the modern origin of the Books of Moses, for the Ten Commandments were, according to the Bible, written upon stone, rather than upon papyrus. and in this respect resemble the old laws of the Semities.



### THE EFFECT OF MOUNTAINS ON HISTORY.

The frontispieces represent the part of the Rocky Mountains which is crossed by the Canadian Pacific Railroad, from which we have received a loan of the cuts. The reason for using them, is to enforce the lesson which is given in the editorial on "The Earliest Home of Man."

It appears that mountains have always served as barriers between nations, and it is only since the railroads have stretched their lines across the continents, that these barriers have been surmounted and the nations brought together. In prehistoric times the nations were so separate that they developed independently. The same is true of historic times, for the Himalayas separated the Hindus and the Chinese; the Alps separated the Romans from the Teutonics; the Atlas Mountains separated the Russians from the Scandinavians; the Mountains of the Moon separated the Egyptians from the African tribes; but at present, barriers are disappearing, and nations are coming together as one great people.



### EDITORIAL NOTES.

**THE SACRED BOOK OF EGYPT.**—The Khufu, who was the greatest of builders and erected the great pyramid of Ghizeh, which involved thirty years of time and the labor of hundreds of thousands of men, and the death of thousands of laborers, is said to have written a book called the "Sacred Book." This was long before the days of Hebrew captivity in Egypt.

**TOTEM** names are the titles of groups of kindred, real or imagined; they are derived from animals, plants, and other natural objects; they appear among tribes who reckon descent either on sword or spindle, and the totem name of each group is usually (but not in the case of the Arunta) the mark of the exogamous limit. None may marry a person of the same totem name. But, in company with this prohibition, is found a body of myths, superstitions, rites, magical practices, and artistic uses of the totem.

**SACRED ANIMALS IN SAVAGE SOCIETY.**—Savages, both in their groups of kin, in their magical societies or clubs, and privately as individuals, are apt to regard certain beasts, plants, and so on, as the guardians of the group, of the society, and of the private person. To these animal guardians, whether of the individual, the society, or the group of kin, they show a certain amount of reverence and respect. The reverence naturally takes much the same forms, the inevitable forms; as, of not killing or eating the animal, occasionally of praying to it, or of burying dead representatives of the species, as may happen.

**MYTHS AND ALLEGORIES.**—The savage is not a constant weaver of myths and allegories, but the myths become the expression or the interpretations of the nature. The semblance is made into word pictures. The Polynesian myth of the "Capture of the Sun," comes from the rays which may be seen at dawn, or evening, resembling ropes hanging from the sky. The myth of the Seilish Indian, is that the wolf pursued the toad, one moonlight night, and made a desperate spring into the face of the moon, and so caused the appearance of the form of a wolf in the moon. So the constellations are groups of animals and men. The single stars are individuals, or chiefs or heroes.

**SAVAGE SPECULATIONS AS TO THE ORIGIN OF TOTEMISM.**—Peoples who are still in the totemistic stage, know nothing about the beginnings of the institution. All that they can tell the civilized inquirers is no more than the myth handed down by their own tradition. Thus the Dieri, or Dieyric, in Australia, say that the totems were appointed by the ancestors for the purpose of regulating marriages after consultation with Mura Mura, or with "the" Muramura. The Woeworung, according to Mr. Howitt, have a similar legend. The most common savage myth is of the Darwinian variety: each totem-kin is descended from, or evolved out of, the plant or animal type which supplies its totem. Again, as in fairy tales, a woman gave birth to animals, where the totem kin derive their descent. In the Northwest totems are often accounted for by myths of ancestral heroes who had adventures with this or that animal. "The Tlingit" (Thlinket) "hold that souls of ancestors are reborn in children, that a man will be reborn as a man, a wolf as a wolf, a raven as a raven."

**PREHISTORIC ART IN AMERICA** was untrammelled. Statues are finished in the round, but generally with a background consisting of a slab or stela. Many of them are presented in such a shape, as to make the costume, head-dress and ornaments conspicuous, the form being without expression. The tablets recently discovered by Teobert Maler present the forms of chiefs and warriors in a great variety of attitudes, in fact, the attitudes are so diverse and distorted, that it is sometimes difficult to trace out the legs, arms, head or face, and distinguish the different figures which are mingled together. The attitudes are very tragic.

**ARCHITECTURE OF THE PERUVIANS.**—Strength and solidity were the salient qualities under the Incas, showing the influence of mountain scenery. The materials used were porphyry and granite; occasionally, bricks, and rarely, wood. The stones, accordingly to Acosta, were full 38 feet long, 18 feet broad, and 6 feet thick. Their enormous size astonishes every traveller. Neither houses or palaces were more than one-story high. The rooms were lighted only by doorways, as they were in Central America, and were without communication with one another, and were usually grouped around a court, which was filled with luxuriant vegetation. The outside of the buildings were rough and forbidding, as the walls were without mouldings, openings, or bas reliefs. In this respect they differed from those in Central America. The inside of the rooms were decorated with tapestries, which hung upon the wall, and glittered with gold and silver ornaments. The furniture was curiously wrought. Niches in the walls were filled with animal figures, wrought out of precious metals. Richly-colored fabrics of wool, served as hangings for the rooms. A high grade of masonry prevailed at Cuzco. Here, the stones were polygonal in shape and of great size.

**ANCIENT GREEK CART.**—Miss H. L. Lorimer read a paper on "The Ancient Greek Cart" before the Hellenic Society. The structural differences of the Greek cart and chariot show that they were distinct in origin. The chariot had a fixed axle, on which the body rested directly, and a spoked wheel. The axle of the cart in primitive times always revolved, consequently the body could not be rigidly attached to it. Wooden blocks were therefore fastened to the floor of the cart underneath, and the axle was inserted in notches cut in these. These axle-blocks continued to be characteristic of the cart even after it had adopted the fixed axle. They are

never found in connection with the chariot. Originally the wheel of the cart was of the type commonly called three-spoked; and this is still found in the fifth century, though it tends to be supplanted by the four-spoked wheel. A wheel of this shape was found among remains of a lake-dwelling at Mercurago, near Lago Maggiore, and carts with axle-blocks and three-spoked wheels occur in Etruscan art of the fifth century. A similar cart occurs as the type of a series of Thracian-Macedonian coins. These circumstances seem to point to a Northern origin for this type of cart-wheel.

## — I — RECENT DISCOVERIES.

AN inscribed Egyptian Scarab amulet has recently been found in a tomb at Jerusalem, which may have belonged to an Egyptian official in Palestine at the time of the Pharaonic rule, as described to us in the Tel-el-Amarna tablets.

ANOTHER interesting discovery has been made at Madaba, in Moab, where the wonderful Mosaic map of Palestine was found some years ago. The new relic is also a mosaic, but is enhanced in value by being accompanied by a Greek inscription which reads: "Lord God who hast created the heaven and the earth, give life to Anastasius, to Thomas and to Theodora. . . . Mosaic of Salamanios." The mosaic represents the sea with a female bust, inscribed Thalassa, rising from the waves, and fish disporting in the water. The discovery was made at the so-called Church of the Apostles.

PROF. TORREY describes the discovery of the extensive ruins of a Phœnician temple—the first of the kind which has come to light. It lies about two miles north of the present city of Sidon. Prof. Torrey says: "The greater part of the ruins is still unexplored; many more antiquities, large and small, and among them doubtless some of considerable importance, await discovery; much is yet to be learned about the most interesting object of all, the temple itself. It would be no small gain for our knowledge of Old Phœnicia if this great ruin could be thoroughly and carefully excavated, and measures then be taken to preserve intact all that remains of this sole monument of its kind."

BONES OF AN EXTINCT RACE.—Mr. Warren K. Moorehead, curator of the department of archæology of Phillips academy, Andover, Mass., has discovered on a farm near Hopkinsville, Ky., what he says was the burying ground of a prehistoric people. Mr. Moorehead exhumed ten skeletons, several being in a fair state of preservation. He is making a preliminary investigation in that region, and likely will be followed by a party of archæologists from Yale university. The bones found he pronounces to be those of an extinct race of Mound-Builders. All the skeletons were in receptacles built of flat stones. Stone cups were found in several graves, and a stone knife was found in one.

A MUSEUM OF NIPPUR of the sixth century B. C., discovered by Prof. Hilprecht, has come into the possession of the University of Pennsylvania. The museum is not very big, being entirely contained in a large earthen jar, but the contents are very valuable from a historical point of view, and show that the ideas of the early curator were much like those of present curators. Whether the specimens were excavated or purchased is not known, but they undoubtedly represent a collection which must have been made during the time of Belshazzar, since it was found in one of the upper strata at Nippur. The best specimen in the jar is an inscription containing the titles of Sargon I., who lived about 3800 B. C.

A BURIED CITY, or rather, a buried temple, has been recently discovered near the village of Carozal in Honduras. The site chosen by the builders is one of the most favorable for many miles around, as it is on an



extensive plateau, 50 to 100 feet above the sea level, and about one mile inland. The soil upon the plateau is remarkably productive. The only apparent drawback was the fact that the nearest fresh water supply was several miles away, but the defect was remedied by the construction of underground reservoirs. The site was marked by about twenty artificial mounds, some of which were constructed over buildings; others contained pottery images near the surface, and on the ground level, painted pottery animal figures.

### LITERARY NOTES.

*The Biblical World* for April, 1903, contains an article by Prof. Samuel Ives Curtis of Chicago, on "A Place of Sacrifice Among Primitive Semites," with illustrations. The author maintains that there is a rock altar, which is a part of the ledge, and is only one foot and three inches over the ground; on the top of it are cup holes, which are designed to catch the blood. This is important, as it explains the cup holes which are common throughout the world. There is a shrine here also, with a lintel and a doorway; a basin for sprinkling blood is shown in front of the shrine.

*Babylonian Parallels to the Hebrew Creation Story* is the subject of a book published by Luzac & Co., London, and written by L. W. King. Among the more important points are: first, the fact that the story is written on seven tablets which correspond to the seven days of creation; second, a watery chaos preceded the creation of the universe; third, light is called into existence before the creation of the heavenly bodies; fourth, the creation of the firmament, with water above and water below; fifth, the creation of the sun, moon, and stars is similar to that in the Bible; sixth, the creation of man is the climax.

*Primitive Writing and the Old Testament.* A book entitled "The First Bible," by Col. C. R. Conder, describes the earliest writings, as follows: (1) In the time of Moses the literature of western Asia was preserved on tablets of brick and stone in the cuneiform. (2) The alphabet did not come into use until about 1000 B. C. (3) The historical statements of the Bible are fully confirmed by explorations and the monumental discoveries.

### BOOK REVIEWS.

UNKNOWN MEXICO; the Record of Five Years' Exploration Among the Tribes of the Western Sierra Madre. By Carl Lumholtz. Two Volumes. New York: Scribners & Sons.

This book reveals the correctness of the legend concerning the "Seven Caves," for the barbarous folk that lived scattered in caverns and woods, like savage beasts, maintained themselves by hunting and gathering wild fruits. The Rain Dance is described as a dance truly diabolic. The peculiar cult of deer in their heads, is also described. Mountain worship, which prevails in Peru, also prevails in this region.

MADRAS GOVERNMENT MUSEUM BULLETIN. Vol. IV., No. 3. Madras, 1903. Printed by the Superintendent.

This Bulletin contains an article on "Some Marriage Customs in Southern India," by Edgar Thurston; another on "Deformity and Mutation," and one on "Fire Walking in Gangam," which reminds us of one written by Professor Langley.

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THE SOUTHERN MOUND-BUILDERS; THEIR WORKS  
AND RELICS.

BY STEPHEN D. PEET.

We have now passed over the different districts which were occupied by the Mound-Builders, and have described their earthworks, their relics, their symbols, their religious customs, and their migrations; but have said little concerning their domestic life and their social condition. This will be the subject of the present chapter. But in treating of it, we shall draw illustrations mainly from the Mound-Builders of the South.

It will be understood that there was quite a difference between the Mound-Building tribes, for some were hunters and lived a comparatively wild life, and resembled the wandering tribes which were well known to history. The Southern Mound-Builders led an agricultural life and were settled in permanent villages, many of which may be identified by the groups of mounds which are found in different localities, the most of them having the form of pyramids, and are found on the banks of the rivers and larger streams. These Southern Mound-Builders may have been ancestors of the Muscogee tribes, which were visited by De Soto in his famous expeditions, but if they were, they must have passed through a great change before they became known, for the testimony of travellers is to the effect that many of the Southern tribes, especially the Cherokees, declared that they did not build these mounds, but found them when they first came into the region, and the Muscogees themselves seem to know very little about their ancestors.

This may be said of the Mound-Builders of the Gulf States, they were more advanced in their stage of culture and in their art products than any other class of Mound-Builders, though the tribes which dwelt in Southern Ohio were, perhaps, similar to them in many respects.

In treating of them, we shall class them together, without regard to the tribes which survived them, taking the earthworks and the relics which have been discovered throughout the Gulf States, as our special object of study.

I. We begin with the earthworks. It will be understood that pyramid mounds are found as far north as St. Louis and the mouth of the Missouri River, as far west as the St. Francis River in Arkansas, as far east as the Etowah River in Northern Georgia, and as far south as the Gulf of Mexico. The largest number of them are found at different points along the Mississippi River. All the groups present striking resemblances. This will be seen if we examine the cut, which represents the works at St. Louis, for here we find that the platform mounds were all arranged around an open area, and were furnished with graded ways which led to the summit, making them resemble the various groups which are scattered throughout the Gulf States.

In reference to the Southern Mound-Builders, we may say that they were Pyramid-Builders, and resembled the Pyramid-



*Earth Works at St. Louis.*

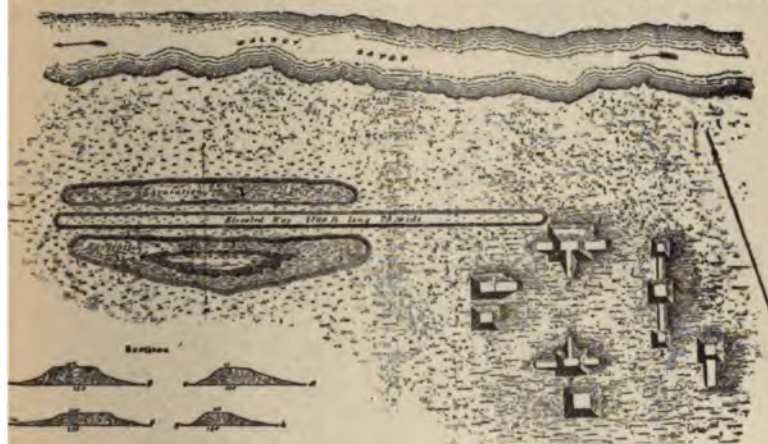
Builders of the Southwest, in many respects, suggesting the thought that they either belonged to the same stock, or had been in contact with them.

The idea conveyed by their earthworks, is that they mark the sites of ancient villages, and were used by the ruling classes as the places in which they erected their great houses and their rotundas; while the common people dwelt on the level ground about them. These great houses, if they were situated in Central America and built of stone, would be called palaces, and the rotundas would be called temples; for they present the same general plan of arrangement, and indicate that a very similar form of government prevailed in both regions. We may take, then, these groups of pyramids scattered through the Gulf States, as representing the same system of society, but at a lower stage; the villages which were located around these pyramids, having been organized after the same



general model as the cities of the more civilized tribes. We give a series of cuts which represent these village sites, some of which were situated on the Mississippi River, others on the rivers farther to the east. It will be noticed that these villages contained groups of pyramids, but were surrounded by artificial ponds, which have been called "Fish Preserves," and were protected by the ponds, very much as the castles of Europe were by the wide moats that surrounded them. In one case, at Walnut Bayou, the pyramids were connected by platforms, and a long wall extended from the pyramids along the side of the stream, or bayou. (See the cut.)

It is an interesting fact that Herrera describes the villages through which De Soto passed as "fortified, with a ditch full of water conveyed to it through a canal from the great river.



*Pyramids at Walnut Bayou.*

The ditch enclosed three sides of the town, the fourth side being secured with high and thick palisades." Having entered the province of Amilco, they traveled thirty leagues to a town of 400 houses and a large square, where the cacique's house stood upon a mound, made by art, on the bank of a river.

Du Pratz also speaks of the Natchez in 1720. He says: "The sovereign of the Natchez showed me their temple, which is about thirty feet square and stands on an artificial mound, about eight feet high, by the side of a river. The mound slopes from the front, but on the other side it is steeper."

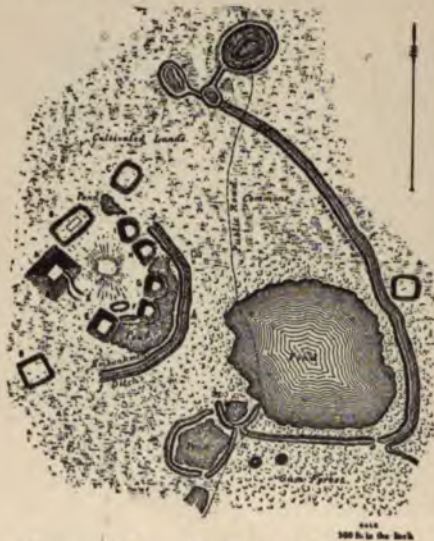
The principle structure at Walnut Bayou is 220 feet long, 65 feet broad, and 30 feet high. It has a roadway on the south side, 60 feet from the base, and leads in regular grade to the top. A similar mound, smaller in size, faces the pyramid, with a graded way and similar platforms. At the east side are three pyramids which are connected, the central one being

96 feet square, and 10 feet high; two others, 60 feet square, and 8 feet high, the three being connected by a wall, or terrace, 40 feet wide, but only 4 feet high. One of these terraces is 75 feet long; the other, 125 feet long. The elevated way is 3 feet high, 75 feet wide, and 2,700 feet in length. There are excavations on either side of the embankment, 200 feet wide and 300 feet long. The relative situation of the pyramids to one another, would indicate that they were the abodes of the chiefs, that the public square was between them, and that the houses of the common people were situated on the level ground outside of the pyramids.

The relative situation of the excavations to each other and to the elevated way suggests the idea that the latter may have

been used as a place of refuge, or a canoe landing, in case of high water; or, what is more probable, as a path from the pyramids to the fish preserves.

The works at Prairie Jefferson are situated in the midst of cultivated lands, and have two lines of ditches surrounding them, with large ponds inside the ditches. This would indicate that the people depended upon the fields, in which they raised maize, for subsistence; but at the same time gathered fish into their artificial ponds. The grouping of the pyramids suggests the thought that they were not only used



*Pyramid Mounds at Prairie Jefferson.*

as platforms on which the ruling classes placed their houses, but also were places of resort in high water, exactly as were the pyramids surrounding the great Cahokia Mounds. The size of these pyramids may be found in the following table:

The works at Prairie Jefferson consist of six mounds, which vary from 4 to 48 feet in height, from 60 to 120 feet in length, and 40 to 135 feet in width. One mound called the "Temple," has a level area on its summit, 51 by 45 feet in diameter. The top is reached by a winding way; but it reminds us of the stairways leading up to the temples of Central America. The mounds which face this temple are all alike; they have terraces in front which incline toward the open space, but are quite steep in the rear. There is an embankment, with a ditch, on the outside, and a pond on the inside, which may have served



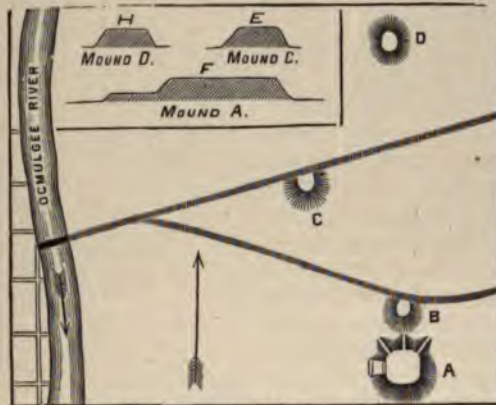
as a defense. The ponds surrounding this group have outlets, which were controlled as the Mound-Builders desired. But the earth which was taken from them was probably used in forming the pyramids.

There is another group at Selzertown, Mississippi. It consists of a truncated pyramid, 600 by 400 feet at the base, and covers six acres of ground. This is 40 feet high, and is surrounded by a ditch averaging ten feet in depth, and is ascended by graded ways. The area on the top embraces about four acres. There are two conical mounds on the summit, one at each end; the one at the west end is not far from 40 feet in height, and has an area at the top of about 30 feet in diameter. This may have been used as a rotunda, though it is unusual to have a rotunda on the summit of a square pyramid. This large mound has its sides to correspond with the cardinal points. It is surrounded by eight other mounds, placed at various points. These are comparatively small. There are other groups of pyramids along the Mississippi River, from Cairo to a point fifty miles above New Orleans. The whole region joining the Mississippi River and its tributaries was densely populated by the same people.

Mr. G. C. Forshey describes works of the same kind, some of immense proportions at Trinity in the parish of Catahoula, Louisiana. Other mounds are found at Natchez, one of them 25 feet high. Prof. J. T. Short says:

These observations convince us that the State of Louisiana and the valleys of the Arkansas and Red Rivers, were not only the most thickly populated wing of the Mound-Builders' dominion, but also furnished remains which present affinities with the great works of Mexico so striking that no doubt can longer exist that the same people were the architects of both.

There are other works similar to these, in Georgia on the Ocomulgee River, at Shoulder Bone Creek and other localities, cuts of which are given. The most interesting group is that on the Etowah River. These mounds are in the midst of a beautiful and fertile valley, occupying a central position, covering an area of some fifty acres, bounded on the east by the Etowah River, and on the west by an artificial canal and two artificial ponds. The width of the canal is from 20 to 55 feet,



*Village on Ocomulgee River.*



and from 5 to 25 feet in depth. Within the enclosure are seven mounds. The largest of which is a pentagon, the sides as follows: 150, 160, 100, 90, and 100 feet; the diameter, 225 feet; height, 65 feet. The approach to the top is by an inclined plane, leading from one terrace to another. The terraces are 65 feet in width, and extend from the mound toward the southeast. There is a pathway on the eastern angle, which Mr. Jones thinks was designed for the priesthood alone. Dr. Thomas thinks this mound was visited by De Soto, and was the place where the ambassadors of the noted Cacique of Cutifachiqui delivered their message to him.

In the mound marked B, adjoining this pyramid, the assistants of the Bureau of Ethnology found two copper plates which represent human

figures with wings issuing from their shoulders. These figures have peculiarities, which remind us of the Mexican or Aztec Divinities. They also resemble those found in Babylonia, but they have arms as well as wings. Still, these figures represent dancers covered with birds masks and wings, but having the usual costumes of the Indians, with knit bands around the ankles, legs, wrists and arms, with a pouch at the side, a maxtli or sash falling down in front. The attitude reminds us of a medicine

man, or chief, engaged in dancing.

II. The houses of the Southern Mound-Builders are worthy of study. These differed from the huts of the Northern Indians in all respects, for they were built with upright walls, with rectangular rooms, and with roofs which were generally thatched but projected over the side and came down near the ground. Some of the houses were built with posts, and were lathed and plastered both outside and inside, though without using nails. The lathing was made of canes, worked in and out around the posts and held in position by interwoven twigs. The plaster was applied both inside and out. (See the cut.)



*The Etowah Mound.*







POTTERY PORTRAITS FROM THE STONE GRAVES.

Lent by Gen. Thomson



The remains of such houses have been found in the mounds of Missouri, and in the villages which abound amid the cypress swamps of Arkansas. There were many dwelling sites, some of which contained a number of fire beds, showing that a succession of dwellings had been built, one above the other; the dwellings having been burned and rebuilt a third or fourth time. One of the dwellings contained three rooms nearly square.

Skeletons were found under the layers of the hearth inside the dwellings. These were of different sizes, and, perhaps,



*Stone Cist in the Shape of a Hut.*

represent members of the same family. This shows that the custom was to bury bodies under the hearth, burn the houses and build again; or, possibly, burn the house on the occasion of any death in the household. It was the custom of the Natchez to burn the body of the chief, and along with him his wives and servants, but there is no evidence of such a custom among the Mound-Builders of this region. The author, at one time, discovered in Adams County, Illinois, a mound which contained at its base a fire-bed, or altar, on which a



*Mound-Builders' House Wall.*

chief had been cremated, with his wives and servants by his side.

It is plain, then, that there was a succession of tribes throughout the Mississippi Valley, some of which built their houses in rectangular shape; others, in conical form. The very shape of the houses furnish a hint as to the stage of culture reached. The ordinary style of building a house among the hunting Indians was that of a cone or hemisphere. But with the sedentary tribes, who were agriculturists, the long house was

common. The Southern tribes varied according to situation. Lodge circles are very numerous on the banks of the Missouri River and in the cypress swamps of Arkansas, and among the stone graves of Tennessee.

But throughout the Southern States the council houses, or great houses, were rectangular. They were sometimes built on the summits of pyramids, and formed a quadrangle, called a public square. Such houses, according to Bartram, were common among the Cherokees and various tribes situated in the Gulf States.

The stone graves were often placed in a circle and arranged in tiers, one above the other, making a heap resembling a conical



*Head Vase from Tennessee.*

cal hut, but with a fire-bed in the center. In this way the dead were supposed to be following the same habits with the living, exactly as was the case with the ancient inhabitants of Europe, who erected the dolmens, though there the bodies were placed in a sitting posture, and the chambers were rectangular. Among the stone graves the usual mode of burial was horizontal, with a bowl or jug near the head or feet or hips, and always with a bottle near the body. This is very suggestive of the belief in the future state. Sometimes vessels in the shape of the human head, or masks inscribed with the human face, were buried with the body. One vessel has been found finely decorated with a life-like mask.



There is a lesson to be learned from this succession of houses, for it proves that the villages were occupied for a long time, and instead of being as recent as some would represent, the villages were ancient. The same impression is made by the study of the burial mounds, for some of these present a succession of burials and indicate that a number of different tribes are buried in the same mounds, thus unconsciously leaving a record of occupation, which may have stretched over a period of even a thousand years, and embraced a succession of population.



*Pottery from Ash-Pits in Ohio.*

III. The pottery and other specimens of art which belonged to the Southern Mound-Builders were of a superior character, and show that this people had more than ordinary skill in moulding clay into imitative shapes. This is indicated by the vase in the shape of a human face, just described. It is also further proved, by the great variety of shapes in which clay was moulded by this unknown people.

We may say that the pottery of the Southern Mound-Builders was very superior to that found in most of the Northern mounds, though there are a few exceptional cases. To realize this, we only need to examine the rude vessels taken out from the mounds of New York and the ash-beds of Southern Ohio, and compare them with those from the stone graves

of Tennessee and the cypress swamps of Arkansas. We shall find that the former occasionally have handles on the side, some with two rows of handles. But there are rarely any imitative shapes presented by them. They are, for the most part, plain cooking vessels, designed to be suspended over the fire, though they occasionally have a pointed base, giving the idea



*Pottery from the Ash-Pits in Ohio.*



that they were forced into the ground and a fire built around them. It is easy to draw a picture of the people using these pottery vessels, as gathered about the fire outside their hut. But it would be a picture of a rude people, without skill in moulding pottery, and with no taste in decoration. The only taste displayed was in decorating the bodies of their chiefs with feathers, and painting their own faces in different colors, or carving pipes in shapes imitating birds and animals.

The Southern Mound-Builders decorated their pottery with a great variety of ornaments, with spiral lines, with circles, with bands, crosses, volutes or scrolls, and occasionally with the suastika or hooked cross. There are vessels, also, which give the shape of a star, with four, eight or nine rays, and a circle on the face of a star, representing the sun. One bottle described by General Thruston has a hand painted on the outside; this was from the stone graves. But a number of bottles and vases from the middle Mississippi district, are decorated



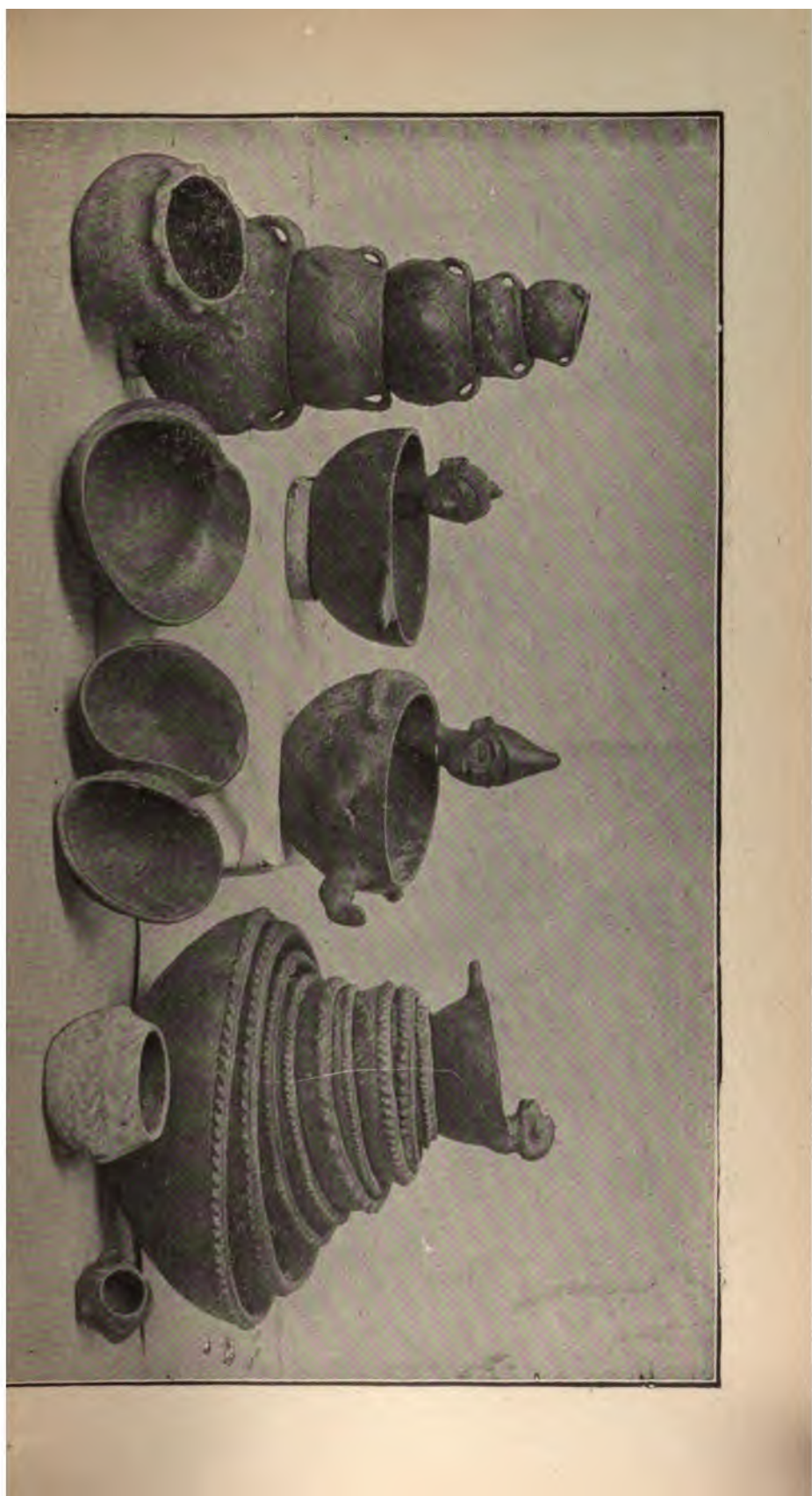
*Pottery from the Stone Graves.*

with scrolls and loops, as well as spirals, and are very graceful.

Dr. Edward Evers has described the pottery found in the swamp villages of Southeastern Missouri, and so throws additional light upon the character and civilization of the people. He says all the pottery belongs to nations, who had abandoned their nomadic habits and were following agricultural pursuits.

All this pottery is made of dark-grayish clay, mixed with sand and shells. The larger portion of it is sun-dried. In many of the ornamented specimens the decoration is painted in red, white and black. Some are decorated with birds' heads, which are hollow, holding clay pellets, which rattle when the vessel is shaken. The curious shape of one vessel suggests that it was a lamp. Square-shaped vessels are the earliest shapes, very rarely decorated. Other vessels have short cylindrical necks, with no handles, resembling large vases or jars, but decorated with disks and circles; occasionally with pointed rays in different colors. One jar has a band around the bowl, with circles above and below the band. Other jars are imitative in shape, of gourds and other natural objects.

The bottles present the most graceful forms. Some of these are shown in the plate. One shows a fish with scales,







POTTERY FROM ARKANSAS.



which are very natural; another, a domestic dog, with spiral lines from mouth to tail; another has a serpent around the bowl; another, a series of circles with a cross inside, and the suastika is found in other circles. Another bottle has concentric circles in different colors. The form of these bottles is very graceful. The symbolism is quite suggestive. There are other vessels and dishes, some with flaring sides, scalloped rims; others very plain, resembling large bowls; others of rectangular shape.

There are also dippers which resemble gourds, and pots which are made in the shape of animals and fishes; the back of the animal is open, but the sides or body make the bowl. Occasionally human heads are represented, the neck forming the base, the face and head the bowl, and the opening of the bowl being at the top of the head. The most graceful of all are the bottles, for these have long necks and spherical bowls, which present beautiful rounded shapes, decorated with attractive figures. The vases in imitation of gourds are very beautiful.

The pottery from the stone graves of Tennessee resembles that found in Missouri and Arkansas, and is probably made by the same race of Mound-Builders. A large number of these vessels are kettle-shaped, varying in size from little toys, one inch wide, to large pots, a yard in diameter. A set of bowls of well-burned ware present symmetrical forms. A bowl, or drinking cup, with a head on the edge, is one of the best pieces of modeling in terra-cotta. Another bowl, with a head on the rim, and arms and feet on the sides, is interesting. Drinking cups in the shape of sea shells are numerous. A little toy vessel in the shape of a fish, is also attractive.

A group of pottery from the stone graves representing fish and animal forms are familiar models of the old pottery-makers. These may represent the emblems of the Southern tribes. Similar forms are found in Arkansas and Missouri.

The pottery vessels which imitate the human face and form are very interesting, because they give an idea of how the pottery-makers looked. There is a difference between them, for some of the faces resemble those of Indians; others have the features of the white man. The very color of the pottery makes the resemblance the more striking.

There is a tradition that a white race formerly existed among the Mound-Builders, though the general supposition is that they were Albinos. These pottery vessels, however, represent faces which resemble those of white men of historic countries. We base no argument upon this resemblance, and yet it is very striking. Dr. Thomas Wilson holds, in his work on "Suastika," that the shell found in the Big Toco Mound in Tennessee, represented in the Twelfth Annual Report of the Bureau of Ethnology, gives evidences of Buddhism in the Western Hemisphere. This shell is in fragments, but it represents a

person with slim waist, legs crossed Hindu fashion, with long feet, broad toes; a girdle about the waist; a triangular covering on the hips; bands about ankles and arms; wings extending from the shoulders, the feathers marked by circles and dots. The whole figure being seated upon a circular cushion, represented by the edge of the shell.

All these show a different dress from the ancient North Americans. There is a mystery about this whole subject of symbolism, which cannot be solved at present. We only call attention to the figure, for the sake of showing that the art of the Southern Mound-Builders was quite superior to that of the Northern Indians. And this suggests that they belonged to a

different stock, and may have come from a different source. Possibly they may have received some of their symbols from more civilized races.

The pottery found in the sand mounds of Florida, is very different from that found in the Gulf States further west, and indicates a different stage of culture. This pottery is made up of large bowl-like vessels which have no bottom, the use of which is a mystery. There are also many pottery vessels in the shape of animals and fishes, some of which are very grotesque, as if made only for amusement.



*Vase With Three Heads.*

There is very little decoration on this Florida pottery, and no such symbolism as may be seen in that found in the stone graves. Still, if we compare the Florida pottery with that found in the Northern States—New York, Michigan, Wisconsin, Minnesota, and Iowa—we shall conclude that this people were better pottery-makers. This impression is confirmed by the study of the fragments picked up on the surface, for many of these are decorated with a variety of patterns.

The pottery of the Gulf States furnishes some problems not easy to solve, as we occasionally come upon vessels which seem to be extra limital in origin. One such vessel is shown in the cut. It represents a water vessel supported by a tripod, in which we recognize three human faces. These remind us of

the Triad of the Hindus, though there is no symbolism and no ornament about the faces, and we are left only to the simple fact that the three faces are joined together and belong to the same piece. Still, if we take the strange combination of heads and compare it with the tripods made up of Vishnu, Siva and Brahma, so common in India, and then take the shell ornament, which presents the seated figure in the attitude of Buddha, we shall be led to ask whether there was not at one time some Hindu visitor in the land. This vessel was found in the Hollywood Mound in Georgia. Another bottle was found in the same mound, which was ornamented with the figure of a large star with eighteen rays; also a light and a dark circle, with a cross in the center of a circle, the whole representing a combination of symbols which is very significant. In the same mound was a pot which was ornamented with a feathered serpent, whose body was covered with lozenge-shaped figures and cross-hatching, making it resemble the serpent symbols of the far Southwest. There were fragments of porcelain and pieces of iron in the mound, which showed the presence of the white man.

IV. The copper relics which have been found in the mounds are the best

sources of information, as to the state of culture reached by the Mound-Builders. Copper relics seem to have been scattered all over the Mound-Builder territory, but are not wholly confined to that territory, for a few have been found on the Northwest coast, and others in the far Southwest. All of these have different shapes from those of the Mississippi Valley, and seem to have been used as badges of distinction, or emblems of office. The same is true of a certain portion of the copper found in the mounds, though the majority of them are articles used for practical purposes, such as



*Florida Pottery.*



axes, chisels, knives, spear-heads, awls, needles and fish-hooks.

They are more numerous in the region of the copper mines of Wisconsin. No state has furnished a greater number or variety of copper relics than Wisconsin, in which copper mines are situated. Large collections of copper relics from this state may be found in Chicago, in Madison and Milwaukee, Wis., and Davenport, Iowa; also, in the National Museum, Washington, and many other localities.

The first account of the finding of copper relics, was published by Colonel Sargent in Drake's "Picture of Cincinnati," and by Dr. S. P. Hildreth of Marietta, Ohio. It appears that certain silver-covered plates of copper had been found in one of the streets of Marietta, near the old fort. These had been buried in a mound with a body; but the obsequies had been celebrated by fire, and while the ashes were yet hot, a circle of

flat stones had been laid over the body, and the fire smothered. A mound, ten feet high and thirty feet in diameter, was then erected. The find consisted of three large circular bosses, or ornaments for a sword belt. A buckler, of copper overlaid with a thick plate of silver, was on the forehead of the body. About the



*Copper Relics from Iowa Mound.*

same time, other copper relics, which were called "sword scabbards," were discovered; also a piece of sheet copper, used as an ornament for the hair, and a copper plumb and a cylinder of copper. All of these, especially the "sword scabbards," suggested the presence of a civilized people, and were so interpreted by the discoverers.

The so-called sword scabbards were afterward explained by Prof. F. W. Putnam, and the so-called bosses were shown to be ear ornaments, or spool ornaments; and the silver-plated sword scabbards were shown to be sheaths for spears. The theory that a sword scabbard and belt, plumb bobs or bosses, and articles of iron had been found in the mounds was soon abandoned.

Later on, in the year 1876, a discovery was made of copper relics, and many other objects, in a mound at Davenport, Iowa. These relics consisted of axes wrapped in a coarse cloth; also

a number of copper needles and other articles. The find was described by Dr. J. W. Farquharson, who also described the Davenport Tablets, and mentioned the fact that some had regarded them as containing a narrative of the Flood.

The discussion over the Mound-Builder problem was precipitated anew by these different finds; some holding that a mysterious people had once dwelt in the Mississippi Valley, but had disappeared; others believing that these relics were left by the ancestors of the Indian tribes. The latter opinion was upheld by the Bureau of Ethnology.

A copper plate from a mound in Vernon County, Wisconsin, is given in the cut. This mound was 50 feet in diameter, and  $4\frac{1}{2}$  feet high. Ten skeletons were found at various depths; at the depth of four feet, two were found; on the skull of one



*Copper Plate from Mound in Wisconsin.*

was a thick copper plate, beaten out of native copper with rude implements, which had been probably used as a breast plate and part of the dress of the Mound-Builder. This plate resembles one found by Professor Andrews of Ohio, both of which show that the Mound-Builders of this region were accustomed to use copper as articles of dress, as well as weapons and personal ornaments and religious symbols.

A discovery was made by the assistants of the Bureau, in 1883, in the neighborhood of the great Etowah Mound, which non-plussed all parties.

Several stone graves were found here at the bottom of a conical mound, near the great mound, or pyramid, and within the same enclosure. Each of these graves contained a single skeleton. Three of them were those of children; four of them, those of adults. The children had on the wrists and neck shell beads. One of the adults had a large conch shell



and a lot of copper near the head; another had an engraved shell on the breast; another, a piece of copper under the head. The most interesting objects were two thin copper plates, and two engraved shells, each of which presented a human figure in the attitude of dancing. These had wings on the shoulders and a mask upon the face, resembling the beak of a bird, thus making composite figures, part human and part animal, suggesting a peculiar superstition or ceremony. The discovery of these figures gave rise to renewed discussion. This discussion was, however, affected by the theories which had been previously held and advocated. Those who believed in the identity of the Mound-Builders with the modern Indians, advocated the idea that the figures proved a contact with the white man, and were post-Columbian in their origin; while those who advocated the antiquity of the Mound-Builders, believed that they showed a contact with the Toltecs and Aztecs. The latter is the opinion of the writer, for two of these figures seem to be holding in the hand a human head or mask; thus suggesting a human sacrifice, a custom peculiar to the Aztecs, and not common among the Indians.



*Shell Gorget from Etowah Mound.*

The figures have bands about the arms and legs, pouches at the side, and badges in the hands which resemble those worn by Indian dancers; the badges on the top of the head resemble the banner stones, but suggest the double-bladed axe, so common a symbol in the East. The attitudes are those of Indian dancers, but the wings which protrude from the shoulders resemble those which are seen on the shoulders of the priests of Babylonia. The fact that these graves were near the Etowah Mound, and that these copper plates were full of symbols resembling others which are common in the region, confirms the theory that the Southern Mound-Builders were partakers of the peculiar customs and symbols of the tribes of the Southwest. Still, the fact that a single plate w



found in each grave, shows the official character of the person buried, and suggests that there may have been a transmission of symbols from one part of the country to another, and that the Southern Mound-Builders had contact with the civilized tribes of Central America in prehistoric times.

It is not an unusual thing to find a mound containing a number of these cists arranged in two, three or more tiers. Dr. Jones says graves of this character have been observed in Northern Georgia, Eastern Tennessee, the valley of the Delaware, Ohio and Southern Illinois. He expresses the belief that in some former age this ancient race must have come in contact with Europeans, and derived this mode of burial from them, and bases his view on the presence of copper crosses and vases with crosses and scalloped circles. Dr. Thomas thinks that they



*Copper Relics from Florida.*

were built by the Shawnees, and says that "it was in the graves near the Etowah Mounds that the copper plates and engraved shells were found, which have given rise to so much discussion. In all their leading characteristics the designs are suggestive of Mexican or Central American origin; but the copper plates are suggestive of European influence. First, the wings rise from the back, as angel's wings, and do not replace the arms, as in Mexican designs; second, the stamping seems to have been done by a harder metal than the aborigines were acquainted with; third, that engraved shell gorgets form a link which not only connects the Mound-Builders with historic times, but tends to corroborate that the stone graves were built by the Shawnees."

On the other hand, Dr. Thomas Wilson maintains that the copper relics and the shell gorgets found in the Etowah Mound and in the stone graves, prove that there was contact

with historic countries in prehistoric times, and that Buddhist symbols may be recognized in various localities.

Bartram's description of the burial customs of the Chocowas proves that they were the Shawnees, rather than the Stone Grave people. After keeping the bodies of the dead heroes for a time, they make a grand funeral. The people then take the coffins and slowly proceed to the place of interment, where they place the coffins in order, forming a pyramid of them, and lastly cover all with earth, which makes a conical hill or mound. This proves that the Stone Grave people were Muscogees, but there are analogies between the Muscogees and the Mayas which are also very surprising. These analogies are as follows: 1, the rotunda resembles the caracol in shape and location; 2, the great house, or public square, resembles the palace; 3, the platform mounds resemble the terraced pyramids; 4, the artificial lakes resemble the cenotes; 5, the earth walls on either side of the chunky yards resemble the "seats" on either side of the "gymnasium"; 6, the location of the rotunda, with its serpent pillars, near the chunky yard, is the same as that of the stairway and temple, with the serpent balustrade.

Copper relics have been found in Florida, which differ in all respects from those found among the Mound-Builders. These have been described by Mr. Clarence E. Moore, who has made many discoveries among the sand mounds. He claims that these copper relics are prehistoric, and show the symbolism which prevailed in Florida.

Mr. Moore describes a piece of sheet copper, with a central boss and elliptical ornaments at the corners; also an oval ornament, with oval boss surrounded by double lines of beaded ornamentation; another oval boss; also two elliptical beads of sheet copper, and a small button of copper; all of which were found at Port Royal, Florida.\* He says that the presence of bark and vegetable fabrics with the copper is almost universal. A breast plate, with a decoration consisting of circles and symbols, arranged in a very regular manner, but showing rivets which have joined two small copper sheets, all of which exhibited the workmanship of the prehistoric people, was found in the same region.

V. The symbolism of the Southern Mound-Builders remains to be described. We have seen that there was a great difference in the religious systems of the Mound-Building tribes for those situated in Wisconsin were evidently totemistic animal worshippers; those in Ohio were sun worshippers; the Stone Grave people were apparently given to the worship of the heavenly bodies and the personification of the Nature powers, while those in the Gulf States possessed idols, which they placed in their houses and on the pyramids.

We may say that there is no part of the Mississippi Valley

\* See the figures on the preceding page.



where symbols are more numerous than among these stone graves and the pyramid mounds of the Gulf States. This is found in the spool ornaments, in the shell gorgets, in the copper plates, as well as upon the pottery;\* but is somewhat difficult to unravel. There is, to be sure, a distinction between the symbolism and the ornaments, and yet the fact that both are found to resemble those prevailing among the Southwest tribes, is very suggestive.

The spool ornaments found in the stone graves and in the Ohio mounds, show that there was considerable intercourse between the tribes of the Mississippi Valley. These spool-shaped articles were always of copper, and resembled the ear-rings which may be seen on the copper plates found near the Etowah Mound, and on the shell gorgets found in the stone



*Sun Symbol on Shell Gorget.*

graves. They were probably used for holding the tassels, or feather bundles, which were the ensigns of office with the chiefs and medicine men.

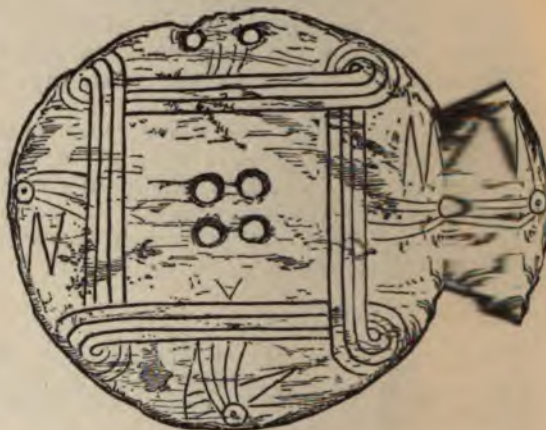
They resemble the ornaments which are seen on nearly all the human figures found in the codices of the Mayas, as well as those which are sculptured on the façades of the shrines and temples. The same is true of the bands encircling the ankles, the legs, wrists and arms of the dancing figures. There is no such combination of symbols in these dancing figures, as may be seen in the image of the god Tlaloc, for in the latter we find the shoulders draped with a tiger skin. The maxtli, or sash, is in the shape of a serpent, and the head-dress is full of all

\*The plate representing the pottery from the Cypress Swamps shows the various symbol which were common among the Southern Mound-Builders. In this we see the serpent, the cross, the circles and the suastika. The shell gorgets from the Stone Graves also exhibit the same figures.



kinds of symbols of the vegetable and animal world, showing that the symbolism had become complicated. But so far as it goes, the symbolism of the Stone Grave people and the Southern Mound-Builders was of the same general character.

There is considerable resemblance between the symbols of this people and those which are given by the mythology of the various Indian tribes, for we find the number four in the looped square, with the birds' heads projecting from the square; also in the cross contained in the square; the lines which form the square itself, and the dots and circles which are inscribed upon the shells, as well as in the joints of the spider legs, showing that the number four was very sacred. We find



*Birds' Heads and Looped Square.*



*Spider Gorget from Missouri.*

also that the number thirteen is not so common as in Central America, nor the number twenty; yet, it may have been introduced among the civilized races by the priests, who made their sacred year to consist of the multiplying of thirteen by twenty and the secular year by multiplying eighteen by twenty. The comparison between the symbolism of the Pueblos and the Mound-Builders is very marked. Here, we find seven and thirteen are sacred numbers. These are drawn from the four quarters of the sky, with the zenith and the nadir added, making six, which, with

the same division of the sky and the common center, gives us the number thirteen; exactly as the four divisions of the sky and the earth, with the throne of the emperor in the center, gives the number nine to the Celestial Empire. The resemblance between the symbolism of the wild tribes of the North and that of the Mound-Builders, has been taken by some to prove that there was no difference between the people; the tribes were all alike, and were in contrast with the people of the Southwest.



*Fighting Figures from Stone Graves.*

We have, however, only to compare the fighting figures which are seen upon the shell gorgets with the figures found in Central America, to prove that there must have been contact. There are birds' wings and claws in these figures, just as there are birds' wings in the shield of the Priesthood of the Bow found among the Pueblos, and in the thunder bird ornaments of the Thlinkits. But in the latter there are no arms along with the wings; while with the gorgets, the arms are prominent, and the hands hold weapons, as important parts of the figure. The fact, however, that the serpent and the circle are so closely associated with the symbols common among the civilized tribes of the Southwest, would show that they were either borrowed from them, or were developed independently, and yet embodied the same fundamental principles.

The great serpent in the Ohio Valley shows how prominent this symbol was among the Mound-Builders of that region, but the combination of the serpent, the cross, the circle, the bird, the winged figure, and the human image, shows that symbolism



*Fighting Figures from Mexico.*



had reached a great perfection among these Southern Mound-Builders, and only needed the presence of a more cultivated priesthood for it to equal that which existed in the Southwest.

The shell gorgets found in the stone graves are very interesting on account of their symbolism, as they indicate a familiarity with the motion of the heavenly bodies and the apparent revolution of the sky, and the habit of personifying the Nature powers under the figures of birds, spiders, serpents, circles, crosses, and occasionally human faces.

The engraved shell gorgets and the copper plates found in the mounds of the Gulf States, are deserving of a closer study than they have ever received; for they show that a religious system had been developed among them, far more elaborate than any among the wild tribes of the North. And it was

purely of prehistoric origin, and not owing to contact with the white man after the time of the Discovery.

The point which we shall make from all these facts, is that the Mound-Builders, and especially those situated in the Gulf States, were not by any means as recent in origin, or as wild and uncultivated, as many have imagined them to be.

The attempt to identify them with the modern Indians has been overriden, and has had a tendency to put the Mound-Builders, as a class, in the



*Suastika on Shell Gorget.*

wrong light, for there is no Indian tribe of the present time who properly represents the real condition of the Mound-Builders of the prehistoric age. There was certainly a difference between them and the Indians as at present known, and it is far better to take the picture presented by their works and relics as our guide, than to take the Indians, degraded as they have been by contact with the white man, as representatives of the people who have passed away, but whose works are still remaining upon the soil, and whose relics are gathered in museums and cabinets for our inspection. The resemblance between the Southern Mound-Builders which occupied the region from the Etowah Mound to the Great Cahokia Mound, and on farther west to the Cypress Swamps of Missouri, is on the other hand very striking. This resemblance is found in the pottery and the symbols seen on the shell gorgets, as well as in the shape of the mounds themselves.

The pipes and the pottery which are made in imitation



birds and animals, are numerous in the stone graves; while idol pipes are more numerous in the region of the pyramids. The best of these were plowed up near the base of the pyramid mounds on the Etowah River many years ago.

The Southern Mound-Builders, however, seem to have recognized the motion of the sky, for all of the symbols, such as the serpents and crescents, hooked cross, and birds' heads, are presented in coils, as if to represent revolving motion. The circles also are arranged in a way to suggest the sun, moon and heavenly bodies. Even the human figures have bent legs and arms, and hemispherical heads. The various elements also seem to have been recognized and symbolized, for the spider has the zigzag in its mandibles, to symbolize lightning. Its legs were divided into four parts, the hooked cross inside of a circle forms the body, while the four bars and eight dots are seen in the tail. The birds' heads projecting from the looped square, with an eight-rayed star inside the square, and a circle and cross on the face of the star, evidently symbolized the air, or rather sky, in motion. The symbols for fire are not so easily recognized, yet the suastika was originally a fire-generator. The earth was also symbolized in the shell gorgets.

The wooden relics which were discovered by Mr. F. H. Cushing on the Island Keyes off the coast of Florida, are also carved in imitation of birds and animals, showing that even here an ancient people lived, who were allied to the Mound-Builders.

It is strange that a people should have lived here on an island remote from the coast, and remain totally unknown until by accident their works were brought to light. For many vessels had passed by these Keyes and many visitors had landed on the shores without knowing that they had ever been inhabited.

It was found that the earthworks, which were erected in the midst of the island, had the same general shape as those in the Gulf States. They were pyramids and had graded ways leading from the water to their summits; but they arose out of the water, giving the idea that the people who built them were navigators and fishermen, but they also led a village life similar to the Southern Mound-Builders. The chief peculiarity of the village was that it was surrounded by an embankment, which was veneered with conch shells, and protected from the force of the waves by this means. There was an opening through the embankment by which the people entered the bayou and reached their habitations. It is supposed that into the same opening, schools of fish were driven, and that it served as an immense fish weir.

Prof. Putnam, in his comments upon this find, points out the resemblance between the wooden objects and masks and those found in Central America, South America, Alaska and the Northwest Coast, and founds an argument upon this that

the Mound-Builders migrated from the West to the East, and finally reached the Florida Keyes; and that they early had their home in the Central American region, which extended around the gulf to Florida.

VI. The idols found in the mounds are very significant. These images remind us of those sometimes seen on the façades of the palaces in Central America. They also remind us of the worship of the god of war, of rain, of death, and the god of light, which prevailed in Mexico. These idols became scattered, some being found in Ohio and various parts of the Mississippi Valley; but the images found in the so-called "dead houses" of the Southern tribes indicate that their religious system was different from that of the Ohio tribes.

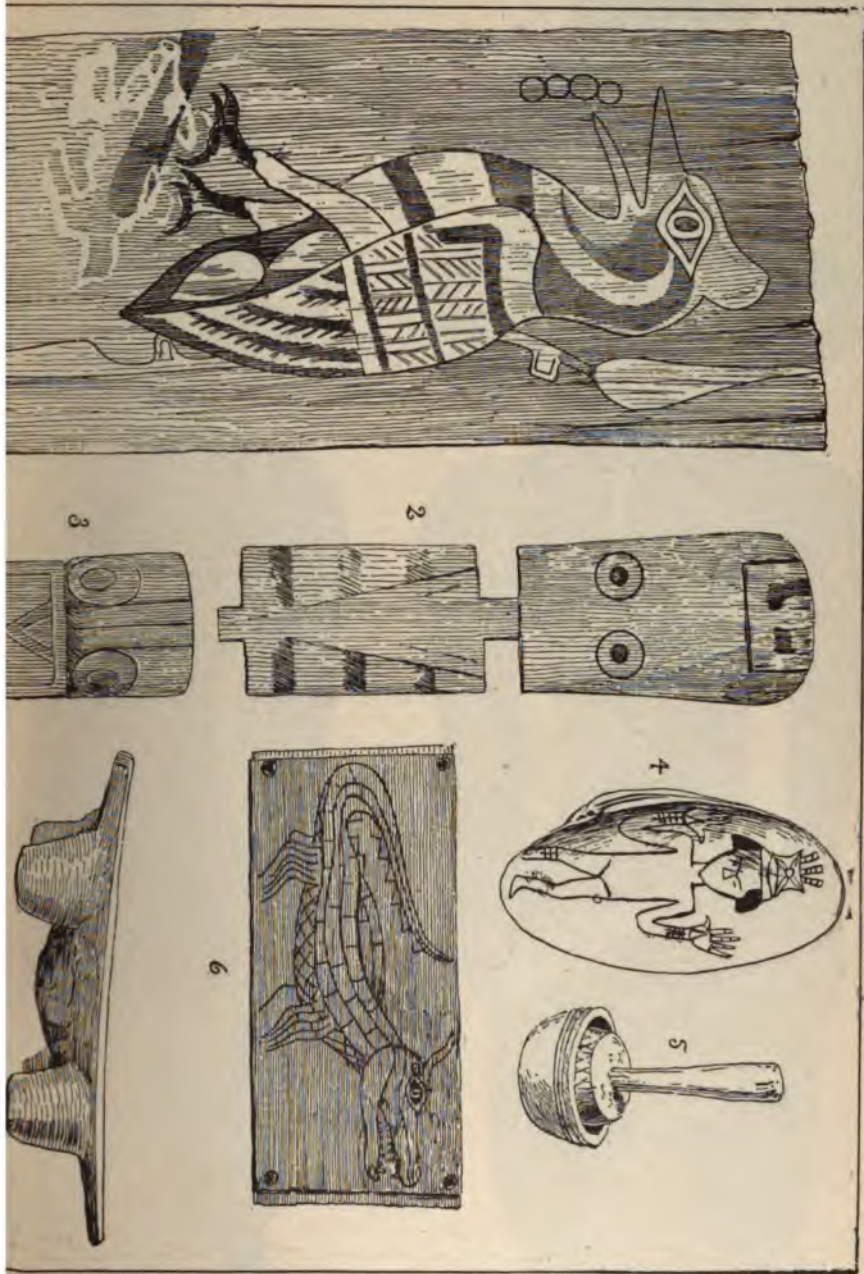
The idols of the Stone Grave people are of various sizes, from large stone images, two feet or more in height, to small clay figures not over three inches in length. They were made of sandstone, limestone, fluor spar and stalactite, as well as of clay. Some have been discovered in caves, others on the summits of high mounds, a few in the depths of the mounds; but a large majority have been picked up from the surface. One of these is represented in the cut. It was found in a cave in Knox Co., Tennessee. It may have been fashioned from a large stalactite. It is twenty inches in length and weighs thirty-seven pounds. It shows a prominent nose, heavy eye-brows, full cheeks, broad square chin and retreating forehead; all of which are features of the Muscogees or Southern Indians. The mouth is formed by a projecting ring; a groove runs across the face, between the nose and mouth, in this respect it resembles the sculptured figures found in Mexico and Central America.



*Idol from Knox Co.,  
Tennessee.*

Another idol in a sitting position, was found in Perry County, Tennessee. Gen. G. P. Thruston, the best authority on the antiquities of Tennessee, has described several stone idols and terra cotta images found in the Stone Grave settlements at Nashville. These show the flattened forehead, vertical occiput, characteristic of the crania of the Stone Grave Race. He says the features of the face were of a heavy Ethiopian cast, similar to those of the dark image in the pottery idols shown in the plate. Traces of garments are some-





WOODEN TABLETS AND PAINTED SHELL FROM THE FLORIDA KEYES.

Fig. 1—Kingfisher Crest of the warrior class. Fig. 2 is an Ancestral Tablet. Fig. 3 is the Horned Crocodile, according to Bartram, was painted on the facades of the great sacred houses of the Creek Indians. Shell painted with the humanized bird god, resembling the copper bird-god found at Etowah Mound.





IDOL PIPE FROM THE ADENA MOUND.

times found on images of clay. The hands of the clay figures were frequently found in the same position.

Mr. Caleb Atwater mentions two idols, found in a tumulus near Nashville, Tennessee; another, near Natchez, Mississippi. Thomas Jefferson mentions two Indian busts, found on the Cumberland River. Du Pratz says the Natchez had a temple filled with idols, images of men and women of stone and baked clay. According to the "Brevis Narratio," the Indians venerated, as an idol, the column which Ribault had erected, to which they offered the finest fruits, perfumed oils, bows and arrows, and decorated it with wreaths of flowers.

De Soto found a large temple at Talomeco, in which were gigantic statues of wood, carved with considerable skill, which stood "in a threatening attitude and ferocious looks," at the



*Idol from Tennessee.*



*Idol from Georgia.*

entrance. The interior of the temple was decorated with statues. Adair saw carved human statues of wood, in the Muscogee country, which seemed to be "the effigies of heroes and the symbols of tribal pomp and power."

There was, however, a difference between the idols found in the Gulf States and the image pipes, or so-called idol pipes, sometimes found in the valley of the Ohio. This difference will be seen in reading the description of one recently discovered in Ohio, by Mr. W. C. Mills, of the Archæological Society of Ohio. The following is his description of the mound and pipe:

The Adena Mound is on the estate owned by Governor Worthington. This mound belongs to the Chillicothe group. From its summit the noted Mound City could be seen directly to the north; also the Chillicothe group to the south, directly east was the Scioto River, to the west is the large hill



on which is the mansion called "Adena." Near the mound at the foot of the hill was an artificial lake, from which the dirt was taken in building the mound. It measured 26 feet in height and 445 feet in circumference. The mound was built at two different periods. In the first period the original mound was 20 feet high, with a base 90 feet in diameter. It was constructed of dark sand taken from the lake. In the second period the mound was covered with a few feet of soil different from that used in the first period. The base was extended more than fifty feet; the apex, twelve or fifteen feet. The burials belonged to both periods. In the first period, a rude sepulchre, made of unhewn logs, was below the surface, and the body deposited in this. In a number of cases the loose earth was removed from the sepulchres, disclosing large rooms, some ten feet long and seven feet wide, with an arched roof, high enough for a man to stand upright in them. In the second period, the burials were quite different: no sepulchres were prepared for the dead; not one of the skeletons was covered with bark, and only one showed any trace of a woven fabric. This was preserved around a copper bracelet.

The idol pipe represented in the plate was taken from the bottom of this mound, and from a sepulchre made of large logs, placed eight feet apart, the top covered with smaller logs. The implements and ornaments were placed promiscuously in the sepulchre. The effigy represents the human form in a nude state, except a covering about the loins. On the front of this covering was a snail-like ornamentation. The mouth-piece formed a part of the headdress of the image. The front part of the pipe was gray and the back, brick red, and covered with a deposit of iron ore. From the lobe of each ear hung an ear-ornament, resembling the button-shaped copper ornaments frequently found in the mounds.

This review of the religion of the Mound-Builders is fragmentary and somewhat unsatisfactory, but so far as revealed by the symbols and the relics, the conclusion is warranted, that there was a progressive series from the North to the South, consisting of animal worship and sun worship, the worship of the elements and the sky, and the worship of human attributes, in the shape of idols, but no apprehension of the personality of the Supreme Being, this indicates that the Mound-Builders, as a whole, had developed whatever system they had, independently of all other nations. The opinion that Buddhism was introduced into America in prehistoric times is based on the symbolism which has been recognized among the Mound-Builders, as well as among the civilized races of the Southwest but this is at present so little known, that we can hardly base any theory upon it; certainly no such theory as the introduction of a system of religion which was as modern as Buddhism.



## JAPANESE CALENDARS.

### PART II.—FOLK-LORE OF JAPANESE CALENDARS.

BY ERNEST W. CLEMENT, M. A.

We present numerous miscellaneous notes bearing on the various branches of our subject. We learn, for instance, from "Tosa Nikki" the following:

It was the yearly custom in ancient times to bring horses to the capital, for the sovereign's use, from the various places where they were reared to suit his purpose. The time seems to have been the 7th day of the 1st month and the 15th day of the 8th month. White horses, as befitting one of "divine origin," were the only kind in request at this period.

Other items are on the authority of Dr. W. E. Griffis. In pouring out oil for the lamp during *kan*\* (the coldest part of winter, late January or early February), if by accident even a single drop of oil is spilled on the floor, some damage will be done by fire to the house. This, however, may be averted by sprinkling a few drops of water on the head of the spiller of the oil. *Kanshoku* is the name of "about the 105th day after the winter solstice, so-called from the universal custom in China of abstaining from cooked food on that day" (Brinkley).

On New Year's Day, merchants shut the doors of their store-houses, lest good-fortune depart. People never sweep the floor on that day, lest good luck be also swept away, [And the writer of this paper was once warned that he must not take medicine or consult a doctor on New Year's Day, because such acts would portend a year of illness].

On New Year's Day, pater-familias does not like any one to utter the sound *shi* (death) or any word containing it. This is a difficult matter in a household, since the syllable *shi* has over a dozen different meanings, and occurs in several hundred Japanese words, some of them very common. Thus, let us suppose a family of husband, wife, child and servant, numbering four (*shi*). A visitor calls, and happens to use the words *Shiba* (a city district in Tokyo), *shi* (teacher, poem, four, to do, etc.). The host, at first merely angry with the visitor, who so forcibly uses the sinister words, is incensed when the latter happens to remark that his household consists of four, and wishes him gone. Moodily reflecting on his visitor's remark, he resolves to dismiss his servant, and so make his household three. But the shrewd servant, named Fuku, remonstrates with his master

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\* When *kan* (cold) or *sho* (heat) comes later than its calendar date, it is called *sankan* or *sansho*, "left-over cold" or "heat."

for sending away *fuku* (blessing, luck) from his house. The master is soothed.

New Year's Day was called *sangen* (three beginnings), because it was the beginning of a year, a month, and a day. From Inouye's "Sketches of Tokyo Life" we learn that aged persons provide against failing memory by passing through seven different shrine gates on the spring or autumn equinox. An incantation against noxious insects, written with the infusion of India ink in liquorice water on the eighth day of the fourth moon, Buddha's birthday, will prevent their entrance at every doorway or window where it is posted.

The 16th of January and the 16th of July were and are special holidays for servants and apprentices, and considered sacred to Emn.a, the god of Hades. The 16th of the sixth month—called *Kajō*—and the 1st of the tenth month—called *Genjō*—were also festivals. At the time of the winter-solstice doctors would worship the Chinese Esculapius. "The foot-wear left outside on the night of the winter equinox should be thrown away; he who wears them will shorten his own life. If you cut a bamboo on a moonlight night, you will find a snake in the hollow of it between the third and fourth joints." "During an eclipse of the sun or moon, people carefully cover the wells, as they suppose that poison falls from the sky during the period of the obscuration." "If on the night of the second day of the First Moon one dreams of the *takara-bune* (treasure-ship), he shall become a rich man." "The child of three years keeps his heart till he is sixty." "Any thing is useful after three years." "A sixth day camellia" refers to anything that is too late, because the flower should be brought on the fifth day. The first "dog day" and the third "dog day" in July are days for eating special cakes. "The Third Dog Day is considered by the peasantry a turning point in the life of the crops. Eels are eaten on any day of the Bull (*Doyō no Ushi*) that may occur during this period of greatest heat."\* The 17th of each month is a regular holiday for Tokyo barbers. There is a proverb that "the gossip of men even [lasts only] 75 days."

The first days of the 1st, 6th and 8th months were celebrated by the Tokugawa government. In olden times there were certain fixed days for holding the markets, "a fact permanently recorded in the names given to some of the market sites, as for example, the towns of Yokkaichi and Itsukaichi (fourth-day-market and fifth-day-market)." We find also Futsuka-ichi, Mikka-machi, Muika-machi, Nanuka-ichi, Yoka-ichiba and Toka-ichiba.

Other "specially appointed festive occasions" were the following: "Entertainments in April (third month of the old calendar), when wine cups were floated down stream; or in February (first month of the old calendar) when young pines,

\* See Chamberlain's "Things Japanese" under "Festivals."

growing on the hills or in the fields, were pulled up by the roots; or in the fall, to view the changing tints of the maples." And to the *gosekku* were originally added the festival of the "late moonlight" (13th day of the ninth month) and the festival of the "last chrysanthemum."

The guards of the gates of the Shogun's castle in Yedo were divided into bands, which took turns as follows: At the Chujaku Gate each of the six bands was to be on duty for a day and night, by turn: the first band on rat and horse days; the second, on ox and sheep [goat] days; the third, on tiger and monkey days; the fourth, on hare and bird [cock] days; the fifth, on dragon and dog days; and the sixth, on snake [serpent] and hog [boar] days." At the Naka Gate, "each of the five bands was to be on duty for a day and night by turns, once on every five days." The Ote-San Gate was guarded by only four bands, each of which "was to be on duty for a day and night, by turn: the first band, or the *Kogagumi*, on rat, dragon and monkey days; the second band, or the *Negoro-gumi*, on ox, snake and bird days; the third band, or the *Iga-gumi*, on horse, dog and tiger days; and the fourth band, or the *Kitaroki-gumi*, on hare, hog and sheep days."\*

"The hog [boar] day of the tenth month," "the third day of the first month" and "any special festive day" might be used for a performance of the *No* Dance.

In Shinano Province, the thirty-third day before *Hangesho* is sowing time.

The day when a child becomes two years old, is said to be the day when it "can remember and speak of its former birth."†

*Nijuroku-ya-machi* (twenty-sixth evening waiting) is the name applied to "the custom of sitting up on the night of the 16th of the seventh month (o. s.), to witness the rise of the moon, supposed to be efficacious for securing longevity" (Brinkley's Dictionary).

*Misoka* (thirtieth day) was specially set apart for the payment of the bills of the month; and the name was loosely applied to the twenty-ninth day, just as it is now loosely applied to the thirty-first day: in other words, the name came to mean the last day of each month. The last day of each year is called *Omisoka* (Great Thirtieth Day).

"It was customary to wear a wadded garment (*wata-ire*) from the ninth day of the ninth month,‡ and socks from the tenth day, but September, the ninth month of the new calendar, being warm, the old practice no longer obtains." On the festival of the ninth day of the ninth month, people, with a view to lengthening their life and averting calamity, drank *sake* flavored with the flowers of the chrysanthemum (*kiku*), and

\* From "The Thirty-six Gates of the Shōgun's Castle in Yedo."

† See Hearn's "Out of the East," pp. 137, 138.

‡ See also Vol. XIII., Pt. 1, pp. 6, 7, of the Transactions of the Asiatic Society of Japan.



consequently called *kiku-sake*. Chestnuts, sometimes mixed up with boiled rice, were eaten on the same day; but the ninth month of the present calendar can boast neither chestnuts nor chrysanthemums, so this custom is departed. On the thirteenth day of the same month, people in general and poets in particular, made a point of admiring the moon, the former presenting offerings of rice-cakes (*dango*), and the latter composing verses in her honor. This practice is said to have commenced about 1,000 years ago, in the reign of Uda Tenno.\*

"The twentieth day of the tenth month of the old calendar was that chosen by merchants and shopkeepers for a merry-making, under the patronage of Ebisu, the God of wealth and guardian of markets. At one end of the room in which they met to spend the evening, there was hung a picture of Ebisu, with a huge perch under his arm, and a fishing-rod in his hand, and to this was offered the favorite fish *tai*—a kind of perch, *sake*, and round cakes of *mochi*. As the feast proceeded, one would seize on any article that lay handy—such as a cup or a bowl—hold it aloft, and demand a fancy price for it, say 100 or 1,000 dollars. Another would grasp at the offer, and the mock bargain would be completed amidst the clapping of hands, the transaction being taken as a fore-shadowing of success in the making of real bargains in the future."†

"The 15th of November is a day of some importance to the little folks. The heads of children are generally shaved, until they are about three years old, according to the Japanese reckoning, which counts a part of a year as a whole year. But after this, beginning from the fifteenth of November, a tuft of hair is allowed to grow on the top of the head. From the same day, a boy of five years old is allowed to wear trousers (*hakama*) on state occasions, and a girl of seven may put on the broad sash or girdle (*obi*), which is so important an article of feminine attire. An entertainment in the evening celebrates the attainment of any of the foregoing privileges, known respectively as *kamioki*, *hakamagi* and *obitoki*. Infants born during the preceding twelve months are taken on this day to a Shinto shrine, where the mother performs an act of worship."‡

"The school-training of a Japanese boy begins on the sixth day of the sixth month of his sixth year, on which he receives his first lesson in calligraphy."‡

Another such ceremony is known as *gembuku*, at the age of fifteen, when a youth "donned for the first time a man's clothes and changed his name."

"On each of the two Bird days§ that come in November, there is held in Tokyo a fair called *Tori-no-Ichi* (Bird Fair). visitors to which are generally seen returning with a bamboo rake in their hand. This rake, called *kumade* (Bear's Paw), is

\* From "The Japanese Months."

† Ibid.

‡ Rein's "Japan," page 428.

§ Cock Days.

ornamented with imitation account books, and with paper figures of the Gods of Fortune, the tortoise, the crane and other emblems of success or prosperity; and the rake itself, being an instrument used for drawing things together, sets forth the grasping and gathering together of things that are prized in this life. The keepers of restaurants and houses of entertainment purchase and display a larger kind of rake than other people. The fair is held at Otorijinsha, in Shitaya, Tokyo, and one or two other places."\*

This part of the subject is still further illustrated by the following extract from Mrs. Flora Best Harris' "Log of a Japanese Journey," which is a translation of Tsurayuki's "Tosa Nikki":

"Happening to notice how long my nails had grown on shipboard, I counted the days and discovered that it is the day of the Rat.† As it is not the proper time, I have not cut them.

"Remembering that the day of the Rat in the first month is a holiday at the capitol [Kyoto], I felt anxious to celebrate it, but in default of a pine-tree, could not do as I desired.

"A certain woman tried to compose a stanza on the occasion, but being on shipboard, the theme proved a difficult one, so that the lines have little merit.

"Whether this day can really be

The day of the Rat is a puzzle.—Ah me!

Were a fish-wife but here, she might drag from the water

A sea-pine to cheer us with festival glee."

Japanese children would welcome certain festival days on account of special feasts on such occasions, as, for instance, in addition to those already mentioned, the following are found: boiled red beans and rice (*azuki-meshi*) on days sacred to Inari Sama; "rice-flour cakes wrapped in the leaves of a species of oak called *kashiwa*" at the Boys' Festival; and *sake* on almost all occasions, "with a spray of peach blossom inserted in the bottle" at the Girls' Festival. And *mochi* (the rice-flour cake

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\*"The Japanese Months."

†"The 'day of the Rat' in the first month was a holiday which the people celebrated by procuring young pines, which they planted with much rejoicing as emblems of long and happy life. As Tsurayuki found the day an inappropriate one for cutting his nails, the reader may be glad to know that cutting finger-nails was perfectly proper on the day of the Ox, and that the day of the Tiger could be devoted to cutting the toe-nails."

In this connection we append the following paragraph from the chapter of "Vulgar Errors" in Sir Thomas Browne's "Religio Medici": "The set and statary time of paring of nails and cutting of hair is thought by many a point of consideration, which is, perhaps, but the continuation of an ancient superstition. For piaculous it was unto the Romans to pare their nails upon the Nundinae, observed every ninth day; and was also feared by others in certain days of the week, according to that of Ausonius, '*Ungues Mercurio, barbam Jove, Cypride crines*,' and was one part of the wickedness, that filled up the measure of Manasses, when 'tis delivered that 'he observed times' (II. Chron. 33: 6)."

mentioned above) is the special food of the New Year's season. as well of of many other festal occasions.

"To dream of riches with a picture of Daikoku purchased at a temple under the head, on the day of the Rat, \*\*\* is certain to bring an accession of fortune within a year."

The Occidental "sweet sixteen" may be found in the Japanese *musume nihachi* (a girl twice eight); but there is also a proverb that "even a devil is pretty at eighteen," and another of "even a dragon at twenty."

The indefiniteness of Japanese time-reckoning and the dilatoriness of the people are further illustrated by the practical meaning of such phrases as *tadaima* (just now), *sugu ni* (directly), *jiki ni* (immediately), *hayaku* (early), etc., which must not be taken literally!

#### THE LAND OF APPROXIMATE TIME.

Here's to the Land of Approximate Time!

Where nerves are a factor unknown,  
Where acting as balm are manners calm,  
And seeds of sweet patience are sown.

Where it is ill-bred to go straight to the point,  
Where one bargains at leisure all day,  
Where with method unique "at once" means a week,  
In the cool, easy Japanese way.

Where every clock runs as it happens to please,  
And they never agree on their strikes;  
Where even the sun joins in the fun,  
And rises whenever he likes.

Then here's to the Land of Approximate Time,  
The Land of the Leisurely Bow,  
Where the overcharged West may learn how to rest,  
The Land of Inconsequent Now!

—Jingles from Japan

\* \* \* \* \*

The subject of age brings up many interesting points. In the first place, it is pretty generally known, that in Japan the birthday of the "individual was not considered of sufficient importance to be celebrated, and that ages were computed from New Year's Day, which thus became a kind of national birthday. And, as Japanese reckoning was inclusive, a child born on the last day of a year would be considered two years old on the first day of the next year, because he had lived in both of those years." Therefore, in case of inquiring a person's age, it would be very important to know whether the reply gave "Japanese years," or "full years." Ignorance or forgetfulness of this distinction has often led to mistakes, and quite serious ones in the case of historical records, chronicles and genealogical tables. The inclusive reckoning must also be carefully noted in such an expression as "ten days ago," "ten days later," "for ten days," etc., which may mean what Occidentals would express by "eleven days." We may state right here, what has un-



cloubtedly occurred to the reader before this, that Japanese reckonings are quite indefinite according to the Occidental point of view, and present difficulties in the way of mathematical accuracy.

There are also superstitions about ages. Some persons, for instance, "are averse to a marriage between those whose ages differ by three or nine years. A man's nativity also influences the direction in which he should remove; and his age may permit his removal one year and absolutely forbid it the next." There are also critical years in a person's life, such as the 7th, 25th, 42nd and 61st\* years for a man, and the 7th, 8th, 33rd, 42nd and 61st\* years for a woman. "A child born in its father's forty-first year will be the cause of his death unless abandoned."† We have heard a similar story to the effect that a child born (or begotten?) in the father's forty-third year is supposed to be possessed of a devil. When such a child is about one month old, it is, therefore, exposed for about three hours in some sacred place. Some member or friend of the family then goes to get it, and bringing it to the parents, says: "This is a child whom I have found and whom you had better take and bring up." Thus, having fooled the devil, the parents receive their own child back.

\* \* \* \* \*

There are said to be poems about the zoölogical hours; but we have found only one example‡:

*Hito to nareba  
Ne ni fushi tora ni  
Oki idete  
Hito shiranu ma ni  
Suru zo gakumon.*

This may be freely and prosaically translated as follows:

"If you would be a man, go to bed at the rat-hour, get up at the tiger hour, and study while no one knows it: that is the way of learning."

\* \* \* \* \*

The following items about the superstitions of seasons have been obtained from a booklet by Mr. Hachihama on "Superstitious Japan" (*Meishin no Nippon*): If one swallows seven grains of red beans (*azuki*) and one *go* of *sake* before the hour of the ox on the first day of the year, he will be free from sickness and calamity throughout the year; if he drinks *tozo* (spiced *sake*) at the hour of the tiger of the same day, he will be un-

\* The 61st year of a person's life is of special interest, because it is the first of a second cycle of sixty years.

† Inouye's "Sketches of Tokyo Life."

‡ Said to have been written by the famous patriot, Kusunoki: certainly the metre is too irregular for a good poet!

touched by malaria through the year. On the seventh day of the first month if a male swallows seven, and a female fourteen, red beans, they will be free from sickness all their lives; if one bathes at the hour of the dog on the tenth day [of the same month], his teeth will become hard. If one bathes on the second day of the second month in hot water into which *hiba* has been put, though he grows old, he will have no wrinkles; if one washes his hair on the first *hi-no-e* day of that month, all his illnesses will be cured; and, as fish are poisonous on the ninth, and the *ka-no-e-tora* day, of that month, they should not be eaten. If one bathes at sunset of the sixth day of the third month, or at the hour of the monkey on the seventh day, or on the seventeenth day, he will escape calamity, and, moreover, will become talented; to eat salty food on the eighteenth day is a way to increase the reproductive powers and harden the teeth. If one bathes in the evening twilight of the fourth day of the fourth month, he will avoid litigation; if one bathes on the seventh day, he will become wealthy; and in order not to injure the human energy, during this month, it is well not to eat pheasant, eel, chicken and garlic. On the fifth day of the fifth month, if one eats fruit, he will fall sick, and if, in drying duckweed, it smokes, it will drive away mosquitos; moreover, as the fifth, sixth and seventh days of that month are days of "nine poisons," men and women should refrain from intercourse, and if any violate this rule, their lives will be in danger for three years. If one bathes on the first day of the sixth month, he will escape sickness and calamity; but if one bathes on the sixth day, he will lose his business; and, if one pulls out white hairs on the nineteenth day, they will not grow out for a long time. On the seventh day of the seventh month, if one, taking sweet flag, and putting it in *sake*, takes such medicine, he will not get drunk during the year; if one bathes on the seventeenth day, he will not get gray hairs. If one bathes on the third, seventh and last days of the eighth month, he will escape calamity, become clever and receive blessings from heaven: during this month ginger, fowls, pheasant, eggs, celery, raw fruit and raw honey must not be eaten; and if anyone violates this rule, he will become sick and destroy his vitality. On the ninth day of the ninth month, if one makes *sake* with chrysanthemum blossoms, he will drive away the headache, and, if one swallows *hiba* in *sake*, will not get gray hairs; if one eats ginger this month, he will become blind, and, if one eats melon, he will become dyspeptic. Bathing with *hiba* hot water on the first day of the tenth month will drive away sickness; bathing on the fourteenth day will bring long life; moreover, this month wild boar, onion and potato must not be eaten. In the eleventh month, lobster, turtle and such shell fish must not be eaten. Bathing on the first, second, thirteenth and fifteenth days of the twelfth month, will drive away misfortune; and in the evening of the thirtieth, if one, offering in the kitchen a

light and *miki* [*sake*], worships the small-pox god, the children of that house will have the small-pox very lightly.

\* \* \* \* \*

Although this subject of the old calendar is a very interesting one to the student of ancient customs, superstitions and folk-lore, yet we must acknowledge the force of the objections raised in the following clipping from the *Japan Mail*:

"In a note entitled 'Get Rid of the Old Calendar Superstitions,' the *Kyōiku Gakujutsukai* calls attention to the uselessness of perpetuating childish notions connected with the old calendar. One is surprised, says the organ we are quoting, to find newspapers which advocate progress devoting so much valuable space to representations of the tiger this year. It is time that such things were consigned to oblivion. If the newspapers would refuse to lend themselves to the perpetuation of silly superstitions, their readers would soon grow ashamed of them. But instead of leading in this matter, the press follows the lead of the unenlightened. If the old calendar and all that associates itself with it could be put out of the thoughts of the masses, a great obstacle to progress would be removed. Opening one of the almanacs published for the convenience of old-fashioned thinkers, we find notices of divination, fortune-telling, face-reading, etc. We are told how to find out what days are lucky, and when those indecent festivals called *inshi matsuri* take place—in fact, these publications are made the medium of perpetuating every conceivable harmful superstition and abomination. Hence it is we write, 'Abolish the old calendar and all its belongings,' says the *Kyōiku Gakujutsukai*."\*



## THE INVENTION OF CHESS AND BACKGAMMON.

BY MAJOR H. G. RAVERTY.

[From the Journal of the Asiatic Society of Bengal.]

There appears to be much uncertainty regarding the origin of the game of chess. One who has written on the subject asserts, that "the date of its inception no one has discovered, and the question remains to this day a vexed one. Periodically something turns up to bury all former suppositions in the matter, and the day of its birth is put back a few thousand years."

A German professor, however, is said to have "discovered from the last excavations on the pyramids of Sakkara, a wall painting in which an Egyptian king, Teta, is represented playing chess with a high official." This monarch is stated to have reigned about 3300 B. C.; while another professor corrects this chronology, and puts it back some four centuries to 3700 B. C.;

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\* And yet Lafcadio Hearn affirms that the old calendar "is incomparably more exact than our Western calendar in regard to nature-changes and manifestations."



so that, according to this last surmise, the game of chess is very old indeed, and must have been known in the once mysterious land of Mizraim *only* about 5,205 years ago. But all this is absurd.

But the earliest mention of the game in Sanskrit writings, as far as we know, is in the first half of the 7th century A. D., in a work entitled "Harsha-karita," said to be the earliest attempt at historical romance in that language, which was translated by Prof. E. B. Cowell of Cambridge a few years since; but chess is only referred to therein as *known* in Hind, not the time of its inception.

I shall now proceed to show how, when, and why it was invented.

Among the events of the year 353 H., which commenced on the 1st of August, 946, of the Christian era, just nine hundred and fifty-five years ago, the death is recorded of Abu-Bikr-Muhammad, known as Sul-us-Suli, or Sul, who was a native of a place called Suli. He was a man of vast erudition, and proficient in most of the sciences and learning then cultivated, including chronology and the traditions of the prophet, Muhammad, and was the author of several works. He was, moreover, the greatest chess-player then known, and was famous as such throughout the Musalman countries. His skill and proficiency in this game, in consequence, became a proverb; and when anyone attained great skill therein, people used to say: "So-and-so is a perfect Sul at chess," or "He is as proficient as Sul before him."

On this account an idea arose among some persons, that Sul was himself the inventor of the game; but this was totally incorrect. It was invented by the sage, Sahsih, or Sihssih, or Sis as it is written by different foreign, *i. e.* non-Hindi, authorities—but it is a Musalman corruption of the purely Hindi name of Sahasi, son of Dahir, whose family in after years, became rulers of Sind, and which Sahasi was also known under the by-name of Laj-Laj. He is said to have invented it for a Rai or Rajah of the territory of Sind, named Bhalit, by some called Baghil, who was famous under the name or title of Sheram. The reason of its invention is said to have been because Ard-shir, son of Babak, of the Sassanian dynasty of Iran-Zamin, or the ancient Persian empire, had invented, long before, the game of *Nard* or backgammon.

Ard-shir Babakan having invented it, the game was also sometimes called *Nard-i-shir*, after him. He devised a chequered cloth (both it and chess are still played throughout the East, on a chequered cloth, which folds up, instead of on a board, as with us) containing twelve divisions or compartments according to the twelve solar months of the Persian year, and the *muhrahs* or counters with which *Nard* was played, corresponded with the number of days of the lunar month of the Fire-Worshippers or Ancient Persians; and one half of the

counters were white and the other black, because one-half the month has moonlight nights, and the other half dark ones. The moves from one division or space to another he likened to the decrees of destiny, which vary and change, are turned and inverted, in the life of every human being, the fate of each one differing from that of another.

So, after this game of *Nard* or backgammon had been invented, it was received with the utmost interest and delight; and after it had become generally known, the people of Fars (Persia proper) used to make a great boast of it, and to exult over those of Sind adjoining them. On this account the ruler of Sind is said to have sent for the sage Sahsih (Sahasi) and to have commanded him to try and invent some other game, which should entirely surpass this boasted Persian game of *Nard*, but to be also played like it, on a chequered cloth, and which among the wise, should be considered much more intellectual, and to require much greater skill, and far deeper thought, to play successfully.

The statement regarding its invention, contained in a famous old book, entitled "*Nafayis-ul-Funun*," or "*Precious Things in Science*," is as follows:

Sahsih (Sahasi), also known as Laj-Laj, son of Dahir, which latter was one of the ancient rulers of Sind (and the last of the Rais or kings of Sind, who fell in battle fighting against the Arabs, when they subdued that territory in 94 H.—712-13 A. D.—, was also called Dahir), was the inventor of the game. Two reasons are given why it was invented. One is, and apparently the most authentic one, that among the ancient rulers of Sind, Rai Bhalit, by some called Rai Baghil, who was very warlike, and who was never contented unless leading his troops against some one, and carrying on wars against his neighbors, at last became afflicted with some painful disorder which precluded him from sitting a horse, or on an elephant; and as he was passionately fond of military operations, and "setting squadrons on the field," he assembled together the sages, and all the most sagacious and ingenious persons of his court and of Sind, and addressed them, saying: "As you are all aware that I am afflicted with this complaint, I desire that you would devise some contrivance, whereby, without being obliged to sit on horse-back or on an elephant, I may still be able to occupy myself in (the semblance of) warfare; so that I may divert my thoughts from brooding over this disorder afflicting me, and thereby obtain some relief."

Sahsih (Sahasi), otherwise Laj-Laj, son of Dahir, then came forward, and having made his obeisance, said: "I have in my possession an expedient whereby this difficulty may be solved and remedied, and the Rai obtain the alleviation he seeks." Thus saying, he arose, and having gone to his own dwelling, he soon returned, bringing along with him the game of chess complete, a cloth to play it upon, and the chess-men, all of



which he had invented. The other wise men there assembled greatly applauded Sahsih for his invention, and considered that *Nard* or backgammon was not to be compared with it; while Rai Bhalit, was so transported with delight, that he declared to Sahsih, saying: "Demand of me, O sage whatever thou mayest desire, and I will grant it unto thee."

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### THE MYTHS AND LAWS OF BABYLONIA, AND THE BIBLE.

BY JOSEPH OFFORD, M. S. B. A.

The pronouncement of the German Emperor against some of the views promulgated by Dr. Delitsch in his pamphlet "Bible and Babel," and also in his recent lecture at Berlin, has considerably more to be said on its behalf than would be known to persons unacquainted with Assyriology and Semitic studies. The imperial judgment is not undeserved, and a few remarks in corroboration of this statement may be interesting.

The original pamphlet of Dr. Delitsch, which is partly illustrated by pictures that have appeared in an English work, "Light from the East," without any acknowledgement of the fact being made in the treatise, does not dwell, as the learned doctor did in his latest lecture, upon the recently deciphered "Code of Hammurabi" \*; but is occupied with a discussion of the similarities between certain Babylonian stories and myths, as far as in their somewhat mutilated condition they are at present known to us, and the earlier chapters of Genesis.

It is not in any sense novel that we now know that many peoples other than the Jews, possessed accounts more or less distorted of the Creation, and the Flood, and similar subjects; what is new, is, that additional cuneiform literature upon these matters has been added to the tablets originally translated by Mr. George Smith, summaries of which have been preserved to us in Greek by Berosus; making the Babylonian narratives much more complete. These versions, now they have become more intelligible, are found in many cases to be very similar to those of the Bible.

Dr. Delitsch and others, such as Professors Gunkel and Haupt, because of these coincidences, and also because, as should be admitted, they were written down by cuneiform scribes earlier than the Mosaic books, in their Hebrew recension, argue that they are the originals from which the Hebrew accounts were derived. The cuneiform narratives bear few indications of being directly inspired by divine interposition from above, but many evidences of being of "the earth earthy" and approximate, more or less, to myths of other

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\* For the "Code" see "The Code of Laws promulgated by Hammurabi, King of Babylon 2285-2242 B. C." Translated by C. H. W. Johns, M. A. Edinburgh.



ances of a very anthropomorphic and primitively savage culture. If, therefore, the Hebrew records are derived from the Babylonian ones, they are, according to Dr. Delitsch, merely the result of a more advanced and moral people utilizing and improving upon the better portion of the Babylonian myths, and altogether are only a result of the evolutionary progress of one small section of mankind.

There are, however, two very important matters to be taken into consideration tending to contradict this view. In the first place, it is possible that both the Babylonian and the Hebrew record on the subject may be derived from information originally imparted to man, and events recorded by him, of which the Jewish form is the purest, and the more primitive, recension, although it happens to have, in the books we now find it, been committed to writing at a later date than the cuneiform versions.

This, however, does not necessarily involve, though it certainly implies, that they are copies of earlier records of the most perfect and unadulterated recension. Whilst the Babylonian texts are the true accounts amplified by, and intermingled with many nature myths and savage and anthropomorphic conceptions, written in the copies that we now possess of them by the scribes of a race who had departed from primitive simplicity and truth.

To decide the question with accuracy and authority, the arbitrator should be a scholar of erudition in such folklore and in the history of the early races of mankind, and an accomplished Assyriologist and Hebrew scholar. Several such men have, however, come to a decision; and it is one adverse to Dr. Delitsch's views, and as a humble student of these matters I venture to be entirely on their side.

The cuneiform stories, in my opinion, bear irrefutable proofs of being what may be termed, a long and prolix recension of shorter and earlier records, and, moreover, many of the additions to the original are not only of a frivolous and puerile character\*; utterly unworthy of such momentous subjects; mixed up with magic and the crudest absurdities; but are of a nature so indecent and revolting as to be unfit for publication. These portions of the Chaldean myths very properly are left unpublished, but that is no reason why Dr. Delitsch and his partisans should write and lecture as if they were non-existent.

This renders it opportune to mention, in passing, that this Hammurabi Code, to any scholar capable of accurately translating its many clauses, presents punishments for crime, not merely of immorality, but unnatural offenses, quite inadequate to their character, and, indeed, the tone of this, to us wonderfully restored series of laws, is so alien to the high code of the Decalogue, that the suggestion that the latter is a product of

\* The greedy hovering of the gods over the sacrifice "like flies" to eat the meat offering, is an instance of the kind.

the former is certainly unreasonable. This statement as to the defective morals and the cruelties sanctioned by even judicial opinion by Hammurabi's people, applies to all nations surrounding Palestine, and to certain tribes within it, with whom the Hebrews came in contact.

This aspect of the subject introduces the second chief argument contradicting the theories of Dr. Delitsch and his followers. If they desire us to abandon the idea of there having been in any sense anything miraculous: that is to say any intervention transcending merely human evolution, in information afforded to our race as to the origin of its habitation and itself, they are in this difficulty: that a still greater miracle confronts them in historic times, as to the truth of which denial is impossible. This is, that the Jews whilst intermingling with surrounding peoples, often of the same race as themselves, whose practices were of the vilest character, inter-marry with them, "cross fertilized" by them in every way, and even sometimes copying their evil deeds; peoples every one of whom worshipped, or dreaded, a god, or gods, not only, but also a goddess, or many, after which conceit invariably comes (unless it was there before), the moral deluge: the Jews absorbed and retained only the good, rejecting the vile and impure; selected the gold and refused the dross. What alembic other than divine intervention and guidance, supposing, as Dr. Delitsch suggested, they, unequipped with such assistance from genuine ancestral tradition, could ever account for such a fact?

The Mesopotamians had the vaunted code of Hammurabi, fortified by thousands of precedents and judgments; the Greeks had the great Cretan Gortyna law code and the edicts of Solon; the Romans, the laws of Numa and the Twelve Tables; Egypt, the precepts of Menes and his descendants, but the result we know. A perusal of Herodotus and Lucian, Juvenal and Petronius, will give us, doubtless, a fair idea of this. The unbiassed student of history must admit that there was an initial force making for righteousness in the Hebrew race that is by ordinary historic processes unaccounted for. Dr. Delitsch thinks, if he agrees that there was such a force, that they were not endowed with it at first; but that does not eliminate the difficulty of accounting for its assistance.\*

That there are interesting similarities between the Code of Hammurabi and the "Laws of the Covenant" in Exodus 20-24 to 23-19 especially, and also the Laws of Deuteronomy, is certainly true. Also the figure of the Deity (seated upon a throne) Shamash, who is said to have presented the laws to Hammurabi, has in his hand a sceptre, encircled at the middle by a buckle, a frequent symbol of justice upon Babylonian monuments. This is almost certainly the "right sceptre thou

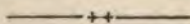
\* Professor Kittel says: "In the Old Testament we are in a sphere differing *toto celo* from that of Babylon: it is quite another world; there it is the sphere of a heathen nature worship, with all its concomitants; here it is that of a revealed and monotheistic religion." See "The Babylonian Excavations and Early Bible History," page 42.



lovest righteousness," of Jehovah in the 45th Psalm. Hammurabi also appears to have come nearer to expressing monotheistic views than other Assyrian or Babylonian kings. He speaks of God Ilu, without specialising any deity's name. It is practically El or Elohim, of the Bible. Hammurabi invokes God, not Bel or Merodach, but the deity in the abstract, omnipresent and omniscient, who knows what occurs in secret. This God is the arbitrator in cases of accidental injury: such a mishap is "an act of God"; article 249 of the Code says, "God struck him," and 266, speaks of a "curse of God." It is to God the oath is taken, and in God, the trust of coming safe, through the ordeals imposed, is placed.

Some years ago, Prof. Jastrow had noted that Hammurabi spoke in such terms of one God, Merodach, as to give one the impression that when thinking of him, the king for the moment lost sight of all other gods. In the prologue to the code, however, Hammurabi speaks in the plural, "The great Gods have called me, on my breast I cherish the inhabitants of the land of Sumir and of Babylonia."

However the real divergence between the Laws of Hammurabi and those of Jehovah, is fundamental. For all the Babylonian asseverations by, or to, God, nowhere does the code speak of pleasing Him, or sin against Him; nowhere of charity to one's neighbor, or of the holiness of God. The religious undercurrent of all the Mosaic legislation is absent, as are its stern rules for moral purity. By Hammurabi, prostitution, or worse, is implicitly permitted. As stated before, it is fair to judge the two codes by results. The Hebrew laws laid the basis in a guided conscience, even if they were ever broken in the keeping, for Christianity to be founded upon. The Code of Hammurabi produced a people whose armed millions were scattered as chaff before the wind by Alexander's brigade of Macedonians and Greeks.



#### ARCHÆOLOGICAL NOTES.

THE HITTITES.—The Hittite inscriptions have been found in districts as far separate as Smyrna in Asia Minor, Ninevah, and Hamath in Syria. One was found in one place, another in another. And they were not all alike. Prof. Jensen says: "It was after the discovery of a number of these inscriptions that Prof. Sayce in particular, the versatile and active English scholar, pointed out an identity of kind existing between several of them, thereby rendering a service, the importance of which is not to be underestimated." "Thus," he continues, "there sprang into existence an historical people whose very existence up to that time seemed wholly unknown to us. To all appearance this people was possessed of a great past. It had extended, or at least had marched victoriously over a con-



siderable part of Asia Minor; it had reached the Euphrates, perhaps even crossed it, penetrating into the East, and had passed down into Syria. It boasted of an art, derived, it is true, from Egypt and the lands of the Tigris and the Euphrates, but still it was independent and creative enough to work out its own method of writing."

Who was this people? Prof. Sayce called them Hittites. For in the place where some of the inscriptions were found, that is to say, in Syria and the district lying to the north of it, is found that territory to which the Assyrian and Egyptian monuments give the name of *Khate*. The Old Testament calls its inhabitants *Khittim* or Hittites. But Prof. Jensen disputes the identification. It would be all right, he says, if all the "Hittite" monuments had been found in Khate, that is, in Syria and its neighborhood; or if it could be proved that the inhabitants of Khate, *i. e.* the Hittites, had travelled through Assyria and Asia Minor and had left inscriptions as they went, and especially if the date of the inscriptions agreed with the date of so widespread a supremacy of the Hittites. But these demands, he believes, cannot be met.

Who were they then? "They were the ancestors," says Prof. Jensen (holding his former opinion more firmly now) "of the Armenians who dwell there still." This is Prof. Jensen's "great discovery. It has been counted a heresy hitherto, a heresy of the rankest kind.—*The Expository Times*.

EXCAVATIONS BY THE PALESTINE EXPLORATION FUND.—In *Athen.*, October 4, 1902, R. A. Stewart Macalister gives a brief report of his first three months' excavations at Tell-ej-Jezari, the ancient Gezer. Four different occupations are revealed, the neolithic, the other three of the Bronze Age. The walls of the three upper settlements have been identified. Two burial caves have been found. One of them was apparently excavated by the neolithic inhabitants as a crematorium, and many burnt human bones were found in it. Later it was used by people who did not practice cremation. The burnt bones are found to have belonged to a non-Semitic race, the others to Semites. In the second cave, which was originally a cistern, were found fifteen bodies, and the finest collection of bronze weapons yet found in Palestine. A large rectangular bath has been found, and a magnificent megalithic structure, apparently a temple at which human sacrifices were offered, was in process of excavation when the report was written. So far no datable objects have been found, except scarabs and jar-handles impressed with the devices of scarabs. These belong to the Middle Kingdom, about 2000 B. C. An earlier report, but in some respects more detailed, is in the *Quarterly Statement* of the Palestine Exploration Fund, October, 1902.—*American Journal of Archaeology*.

## EDITORIAL.

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### RECENT DISCOVERIES IN THE EAST.

We have spoken in a previous number of the earliest home of the human race, and have shown that it was in the valley of the Tigris and Euphrates, the very localities spoken of in the Scriptures and referred to in the traditions prevalent in the East. We are to devote this number to the study of the beginnings of architecture, but shall go back to this very locality for illustrations of the subject.

It is a remarkable fact that the earliest mention of structures of any kind, is that which concerns the tree, the gateway, the altar and the city, all of which are mentioned in the story of the Garden of Eden. It may, indeed, seem to be a mere assumption when we say that these form the elements which appeared in the earliest architecture of the world, but such is the opinion of the best writers upon the subject, and it has been confirmed by many recent discoveries. It was formerly the opinion that the cave was the earliest abode of man, and that the rude hut took its place, and following this was the house, with its doorways and walls and roof; but as we go back to the earliest days we find that primitive man lived in a warm climate, and dwelt among the trees and found food and shelter from the objects of Nature, and only as he wandered from his first home did he find it necessary to resort to caves. The date of his departure from this traditional locality is somewhat uncertain, but recent discoveries have carried back the beginnings of civilization so early, that many have concluded the historic period here preceded the prehistoric elsewhere, and that men were building cities in the central region, while they were dwelling in caves in other and distant localities. This does not prove there was no Stone Age in this region, but, on the contrary, it carries back the date of the age indefinitely, and makes us to realize something as to the antiquity of man upon the earth.

In reference to the earliest condition of man in this locality, we have no actual information, except that which comes to us through tradition; but judging from the nature of the soil, and the character of the climate, and the resources of the country, we may conclude that here man first abandoned the wild state, came into the practice of agriculture, and began the custom of erecting villages, which ultimately grew into cities, and became thoroughly civilized. Such is the opinion of those who have visited the region and have noticed the wonderful fertility of the soil and the ease with which it was irrigated, and the evi-



dence of a numerous population, which once inhabited the region; making it worthy of the name of "Paradise," though at present desolation reigns supreme. The same opinion is expressed by those who have studied the ruins of the various cities which once stood beside the banks of these historic rivers, for they find that there has been a succession of races and peoples for many thousands of years.

What the earliest structures were remains somewhat uncertain, but it seems that man, even in the state of nature, was endowed with certain qualities which enabled him to understand and to use the mechanical principles, for this progress is manifest in the various structures which embody these principles, the earliest specimens of which were probably erected in the valley of the Tigris.

These may have been made out of wood, resembling those which are still occupied by people in various parts



PRIMITIVE HOUSES IN TROPICAL LANDS.\*

of the world, of which illustrations are given in the cut. The rude huts, which were the primitive habitations of man, became more pretentious, and these were followed by the great cities which are mentioned in history. The same mechanical principles were found in the city that were embodied in the house, for every city had a wall corresponding to the wall of the house, a gateway corresponding to the doorway of the house, and a temple corresponding to the hearth in a house.

The house may have been a mere hut made of poles, reeds,

\*This cut represents the huts which are still common amid the tropical forests of the South Sea Islands. The huts which were built on the plains of Babylonia resembled them in some respects, but were made from wattle-work, covered with clay, and had peaked roofs. Pictures of these may be seen cut into the rocks of the region.



wattle-work or mud, but it must necessarily have a wall and a door, or an opening of some kind, and generally would have a hearth in the center. The village would, also, naturally have a wall of some kind surrounding it, and a gateway at its entrance. It matters not whether the walls were composed of timber stockades, or of stone; the gateway a mere opening in the wall, or constituting a lofty portal, the same elements appear in the village as are found in the house. The city always must present the same features: the wall of the city being only a repetition of that of the house and village; the gateway that led into the city was the repetition of the doorway that led into the house; the altar, which was the center of the city, was only the reproduction of the hearth, which was the center of the household, and the temple was only the outgrowth of the altar. The king, or chief, who ruled over the city, was only the representative of the father of the household. The divinity, which was worshipped in the temple, was the divinity of the hearth, with his character changed and his dominion enlarged; the religion of the household being transferred to the temple. This correlation is very important, for it was from the domestic and religious life that architecture grew, and it was this which ruled throughout all the earliest stages of its progress.

There are, to be sure, some who hold that the rude stone monuments, which are scattered over the globe, actually preceded all of these structures which have been referred to in history, and that the dolmens, the standing stones, the menhirs and the triliths, and the earth circles, were the elements out of which all architecture was developed; and it was in the open-air temple that religion made its first home. But we may conclude that these were only modifications which were adopted by a rude people, who dwelt in the forest and who, as the children of nature, disliked the restraints of the city and the customs of organized society, and they only show a parallel development, and prove nothing in reference to the early stages of architecture. It is to be acknowledged that these were all consecrated to the worship of nature divinities, and were connected with the sun worship; but they contain the same elements which were incorporated in the house, and afterward in the city. The dolmen, which was used as a burying place, was patterned after the house—the earth wall represented the wall of the city, the trilith represented the door, the altar stone represented the hearth, the standing stone represented the column; the only element lacking to make a perfect structure, was the roof.

These facts only illustrate the point which we have made, for the structures which appeared in the prehistoric and the early historic periods were all connected with the "beginnings of architecture," and were the embodiment of it, under diverse forms. They also show that all nations, whether situa-

ted in Europe, Asia, Africa, or America, passed through about the same stages of progress, and erected the same class of structures; making walls which were similar wherever they appeared; also, gateways, columns, and even cornices, which resemble one another, the chief difference being in the style of ornamentation and the finish of the different parts.

I. This is the point which we design to illustrate, and shall begin with the description of the wall.

Tradition carries us back to the walls made of osiers, and to the conical roof of the early dwellings, but the walls of the first cities were generally built of masses of clay, supported by abutments; or of rough stone, partially trimmed, called cyclopæan walls; or of polygonal stones; or of stones placed in layers—the progress of society being represented by each style of wall. Various specimens of these walls may be seen



EARLIEST STYLE OF WALL

in the cuts; one of which represents the cyclopæan walls and the Lion Gateway, which were in front of the Bee-Hive tomb of the Mycenæan kings; another, represents the different styles of walls which have been found in the city of Jerusalem; the third represents the wall with abutments, which surrounded the temple

of Jerusalem, the very shape of the stones, and the construction of the walls, furnishing the means by which the history of the city and the temple can be read.

Recent explorations at the ancient Gaza have brought to light a remarkable structure. This megalithic structure is exhibited in the plate. It consists of eight pillars, three of them still standing, and an altar, or a socket, used for holding the "Asherah," or symbol of worship. Mr. Masterman says:

We have the remains of at least seven periods of occupation. Beginning with the caves in which flint knives and a primitive kind of pottery was found, we come next to the period of the earliest city builders, or temple builders, who have surrounded their large enclosure with a city wall, consisting of an earth bank faced with stone. We next find a circle of standing stones resembling those found at Stonehenge in Great Britain. We afterwards find the great Baal Temple, which belonged to the period of the Bronze Age; after this, the historic period.

At first the size of the stones was regarded as an index of a nation's grandeur, and everywhere we find the great cyclopæan walls, which were put together by the brute strength of the people, who were gathered in masses and ruled by one









EXCAVATIONS IN THE TEMPLE COURT SHOWING PAVEMENT OF UR-GUR.

mind, but afterward the stones which involved more mechanical skill and showed a higher finish, were placed in the walls. The same thing is true of the house and the temple—size, rather than finish, was the standard of excellence.

In Babylonia the first or earliest buildings which have been discovered were made of sun-burned brick, but were made up of walls of immense thickness, and contained drains, some of which were arched. The mechanical skill required to construct these walls and the drains was far beyond that which was exercised in the Stone Age. The testimony of all the explorers is to the same effect. Their dates may have been exaggerated, but the facts remain the same. The cities of Babylonia show that a fair degree of civilization had been reached.

With clay as a building material, so readily moulded into any desired shape and capable of being baked by the action of the sun, without the use of fire, it was almost as easy to build a large house as a small one, by the addition of rooms and wings, and stories, which differentiated the house from the palace, and the palace from the temple, and served to make hugeness the index of grandeur. The best specimens of architecture of Babylonia and Assyria, as well as Egypt, were characterized by such hugeness, but without any external beauty.

The cyclopæan masonry was used in the Argive fortresses, as well as the gateways of Mycenæ, and was earlier than the well-dressed blocks so common at Troy, but it is supposed that the massive clay walls discovered by the American explorers at Nippur were much earlier, for they date back as far as 4500 B. C., which was anterior to the building of the pyramids. The American explorers also found pavements at Nippur, which dated back to pre Sargonic times; one of which was called the pavement of Naram Sin. It was situated about six or eight feet above the present level of the desert. Mr. Haynes penetrated through more than thirty feet of ruins before he reached the virgin soil, and thirty-five feet before he was at the water level. But at this lower level there were the human remains, which showed that man had existed in a rude state before this great city, whose ruins rise so high above the desert, had begun to be built. It is supposed, by Mr. Haynes, to be the ancient place where sacrificial victims were burned; but by Professor Hilprecht was supposed to mark the site of a prehistoric grave, which was dug during the Stone Age.

Prof. Hilprecht says that twenty-one strata of historical periods are represented by the ruins of Nippur. In the earliest Sumerian stratum we recognize six phases of historical development, by the remains of the different kinds of brick employed and by the size of the brick; six periods are determined by fragments of baked and unbaked bricks in the temple court. The walls of the early period were of immense thickness, and were



made of unburned clay, but columns were not used until quite late in history. In fact, it is supposed by Prof. Hilprecht that there were libraries in Babylonia before columns were built. Gateways, with inscribed sockets, were used before there were

columns. Ziggurats, or towers, were built before the column came into use. An arch, made out of brick, with wedge-shaped joints, and made out of simple clay, was discovered. It was built to support a vaulted tunnel, which was used for the draining of the foundations of the palace and the



QUARRY-DRESSED STONES.

temple; the preservation of the arch for six thousand years showing the same mechanical strength and skill that built it.

The religious instincts of the people, to be sure, for a long time discouraged any deviation from the original shapes. The sacredness of the house, led to the perpetuity of its shape in the tomb, and the sacredness of both gave a conventional shape to the temple. The conception of the universe was that of a great house, whose dome spanned the sky, and was peopled by the divinities, above, and by man below.

In Egypt, also, graves have been found which antedated the days of the pyramids by several thousand years. These graves show that the habitation which was occupied, was a circular hut, and that the people were in the Stone Age, but were acquainted with the use of pottery, and were accustomed to bury their dead in the form of a circular grave, and deposit pottery vessels along with them.



ROUGH BOSSES AND COMB MARGINS.

The history of the city of Jerusalem is written in its walls and in the stones lying beneath the surface. But before the city was occupied by the Israelites there was on the same spot, the walled town which was built by the Canaanites, and was, perhaps, overthrown by the Hittites.



These possibly may have been in existence when Abraham was following his flocks.

The excavations at Jerusalem, conducted afterward by Mr. Bliss, revealed a series of walls and gateways, which proved a succession of cities even at Jerusalem. The stones in the wall show various styles of masonry and several periods of rebuilding. The lowest course show rough foundation work; above it, quarry-dressed and roughly-squared; the third, straight joints; the fourth, chisel-picked centers and combed-margins; another, rough bosses and comb-picked margins. Great towers were found, with massive walls; also rock-hewn chambers and door-sills, which had been worn by the feet of those who passed over them. A succession of these, one above the other, showed the passage of time. Mr. F. J. Bliss says: "The hint is



WALL WITH ABUTMENTS AT JERUSALEM.

furnished by the fortifications, that the first city was built to resist the great conquerors of the Egyptian dynasty, beginning with Thothmes I. It is possible, however, that they may have been built earlier as a protection against local foes."\*

II. We turn to the gateway. This is a very important element in the history of architecture, for it carries us back to the earliest times, when men dwelt in huts, and brings us on to the time when they dwelt in great cities, whose walls secured a defense, and entrance to which was thoroughly guarded.

We give a picture of the gateway at Mycenæ, which represents the different kinds of walls, the earliest form of the arch, the earliest form of the column, and the earliest form of the hut or house; all in close proximity, and all suggestive of the

\* *Mounds of Many Cities*, p. 137.

traditions of the past, but full of promise for the future. This gateway brings to light that stage of civilization which prevailed during the Mycenæan Age, and shows us the gradual development of architecture through all ages. We see in the walls that guarded the entrance to the gateway, the different forms and styles of dressing the stone: the rough course of masonry represents the cyclopæan period; the polygonal stones represent the second period; the stones with rough bosses projecting, the third period.

The same forms of masonry have been found by Mr. F. J. Bliss in the walls of Jerusalem. Besides these, he found both quarry-dressed and chisel-picked stone, making a fourth and fifth period. The gateways at Jerusalem show several distinct periods, by super-induced sills with door sockets. The width of the gate varies, with the different periods, but the smooth-faced masonry continued through four gate periods. The abutments and gate-towers are important in connection with the history of architecture. In the earliest period, there were no abutments and no columns, but at a later period abutments appeared in Babylonia, in Jerusalem, at Damascus, and at Troy. But the plain wall, with its different kinds of stone cutting or trimming, is a better index of age or period, than the abutment. Great catastrophes came upon the different cities of the east, and changed them into immense heaps, from which there stood forth only the great thick walls and the terraces of the temples. But it is difficult to determine the age, from the ruins and *debris* of the temples; so that when we find a gateway like that at Mycenæ, we can read the record more readily and correctly, than we can that which is presented by different layers of earth, or the different kinds of buildings. There were gateways at Babylonia belonging to different periods, some of which were guarded by lion-headed figures; others, by the figures of immense bulls, and by human figures, with eagle heads, showing that the religious symbols were incorporated into the architecture at a very early date. There were also great gateways in front of the temples of Egypt, but in front of the gateways there were long, parallel lines of sphinxes, arranged in double rows, which guarded the approach to the temple, and imparted a sense of awe and fear to all who approached the temple. The gateway itself was of a more imposing height than the temple, in front of which it stood, but it was built after the same general style, with its walls drawing in towards the top, and an immense cornice, or coping, projecting beyond the wall; while the common religious symbol, of the winged globe, was a conspicuous figure in front of the wall and above the entrance to the gateway. There were obelisks in Egypt, which were placed in front of the temple and which were, perhaps, the earliest form of the column; but were the survivals from the prehistoric period, and are supposed to be connected with sun-worship.





LION GATEWAY AT MYCENAE.





OBELISK OF THOTHMES AT KARNAK.

Obelisks are supposed to be the survivals of the standing stones, which were so common in prehistoric times, and were always connected with the sun-worship which prevailed. These standing stones were connected with the open air temples, which were always circular in shape, and only presented a series of triliths, arranged in the form of a horseshoe, with the altar in the center; but the fact that there was a monolith, or standing stone in the gateway of this temple, and that it was so placed as to cast a shadow into the temple and toward the altar at the time of the rising of the sun, at the time of the solstice, suggests the thought that the obelisk was a survival of the same worship, and that the temple of Egypt was devoted to sun-worship. Of course there was a great contrast between the temples of Egypt and these circular enclosures, for they are surrounded by solid walls, which are decorated by figures of kings and priests, and are filled with stately columns finished in the highest style of Egyptian art. Yet these very temples were so arranged as to catch the rays of the sun as it rises at the solstice. The very innermost recesses of the temple being reached by the rays, which turned the temple into a gigantic telescope.

These elements, however, which were found in the different gateways of Babylonia, Assyria and Egypt, were concentrated into a small compass in the gateway of Mycenæ, for here we find different kinds of walls, representing different ages and styles of architecture on either side of the gateway, itself—the rude lintel, with a post above the lintel, a lion upon either side of the post, a rude form of triangular arch above the post, and behind the gateway we see the conical form of the "treasure house," which represents the primitive hut, and yet was the tomb of a king. The whole progress of architecture up to this time was concentrated into this one locality, but the promise and anticipation of its future is concentrated into the pillar, or post, above the gateway, for this is the earliest representative of the column.

III. This leads us to the column, and its connection with the tree. It was formerly the opinion that the column was the representation and the survival of the wooden post which supported the projecting roof of the primitive house, and so formed the portico to the house. This was a thought mentioned by Perrot and Chippiez, who have shown very clearly that the connecting links are to be found in the tombs of Midas in Phrygia and elsewhere, and assert they were transmitted from Persia to Asia Minor and Greece at an early period. But the opinion of Arthur Evans is that the column is the survival of the tree, which stood in the Garden of Eden, and was a symbol of the presence of the divinity. The standing stones and dolmens were also the survival of the tree.

The columns of Persia have capitals in the form of two-headed oxen, and pyramids in the form of dogs. The columns



of Egypt have capitals in the form of the lotus blossom—buds and blossoms. The columns of the Greeks have capitals in different shapes, each order of Greek architecture being indicated by the shape of the capital. The Doric capital was always in the form of a roundlet; the Ionic capital in the form of a scroll; the Cornithian in the form of a canthus leaf; the Phœnician capital in the form of an animal's head. The American column was without a capital, but had a band about the middle, and served as an ornament in front of the palaces.

None of these decide the question as to whether the column was a development from the tree, and was a religious symbol or not; for some would take the ground that there was an independent origin of the column, and the tree, and the capital, in every country, and that each nation developed the capital and the column from its own ideas, independently of every other nation. This is certainly true, that the column, with its capital, very fitly represents the habits and ideas of the people who have adopted it as the chief ornament in their architectural structures. The animal-headed capital of the Persians suggests that they had to do with cattle; the fluted column of the Egyptians, surmounted by the capital in the form of a lotus blossom, suggests the thought that the lotus was their sacred plant, and was a symbol of their religion. But the column of the Greeks, which was



CARVED POSTS AND RAFTERS.

so different from all others, represented the kingly power—the lion either side of the column, being symbols of strength and power. The position of the column over the gateway which led to the treasure houses of the king, seems to confirm this supposition. There was, however, no doubt, a religious element connected with the column and its capital, everywhere, for the column in its use throughout all ages and lands was more of an ornament than a support, and was never regarded as a mere mechanical contrivance, or a part of the structural development.

There were primitive settlements at Knossos, and a thickly populated region at a remote prehistoric period. This was



during the Stone Age. Dr. Arthur Evans says: "There was a transitional period, when copper came into use. At this time there were columns and streets, and pottery was in common use." At Crete excavations have brought to light a series of primitive houses containing pre-Mycenæan pottery, also evidences of "pillar worship." Dr. Evans lighted upon a prehistoric palace, which he connects with the name of Minos. One thousand inscribed tablets in script, partly hieroglyphic and partly alphabetic, were exhumed. A bridge and a road were discovered, connecting Knossos with other cities of great antiquity. There was a high artistic development at Knossos in prehistoric times. The existence in Crete of a prehistoric system of writing, is maintained. Pottery identical with that at Hissarlik was found in the early strata. Associated with celts, are perforated maces, obsidian knives, spindle whorls and bone implements. A transition period occurred when copper came into use. Pillars of Mycenæan form, sloping downward, narrower at the bottom than at the top, made of wood, were found; also a corridor, priestly forms wearing long robes, a central clay area, the survival of a prehistoric dwelling, were also discovered by Dr. Evans, who says:

Among the great monuments of the Mycenæan world hitherto made known, it is remarkable that so little is found with reference to religious beliefs. The great wealth of the tombs, the rich contents of the pit graves, the rock-cut chambers, the massive vaults of the bee-hive tombs, are all so many evidences of a highly developed cult of "departed spirits."

The pit altar of the Acropolis at Mycenæ was dedicated to the "cult of the ancestors of the household." In the central area of Knossos, however, there has been brought to light two rectangular altars, showing a special relation to the god of the "Double Axe." The colossal rock-hewn altar at the mouth of the Idæan cave revealed the same thing. Throughout Crete, a series of caves contain votive and sacrificial deposits. In the prehistoric city of Gaulos, in Crete, we have the remains of a shrine containing a sacred tree; also a doorway showing the sanctity of the trilith as a ritual doorway. This doorway of the enclosure may have had before it, a sacred pillar; while within the sacred shrine was the tree itself, spreading its boughs over the low walls and lintel. Within this, was a rock-cut cistern, showing that a ritual watering of sacred trees was the regular feature of this form of worship.

In Mycenæ the tree is associated with the sacred pillar. The cult of trees and pillars of rude stones may be regarded as identical forms of worship, but illustrate the progress of architecture as connected with religion. The presence of a tree or bush indicated the possession of the material object by the "Numen" or divinity, exactly as sun worship will account for the rough pyramidal stone, often seen so close to the altar, and in reality would account for the obelisk being placed in front of the pyramid tomb. The cult of Mycenæan times consisted in the worship of sacred stones, pillars and trees. The whispering of the leaves of the trees at Dodonia, was the actual voice of the divinity. In the Druidical worship of the tree, the menhir was the symbol of the divinity; it was a survival of the tree.

The prehistoric stone fence at Rollright guarded the temple enclosure, but the king-stone, is the tree. The Diktean caves contained a stalactite in the shape of a tree. The sanctity of the portal and the doorway, in the primitive cult, is very general, and is associated with the sacred tree. The doorway, in a later architecture, like the dolmen, in Italy served as the dwelling place of the deity, making the threshold to be always regarded as sacred.

The Mycenæan column may have been derived from the tree, which was sacred; its downward tapering distinguishing the Greek from the Egyptian column. The Egyptian obelisk tapered from base to top, and resembled the menhir, while the earliest Greek column tapered from top to bottom, and resembled the tree with its branches.

There is no trace of shafts or capitals at Knossos, though the shape of the shafts or columns has the downward taper, after the Mycenæan style.

The most interesting feature of the column and gateway at Mycenæ, is that they not only represent the survival of all the earliest elements of architecture, but they also represent the earliest form of the arch. Here, the arch is only a triangular opening, above a lintel, the column resting upon the lintel, but supporting what might be called a substitute for the keystone, and all together serving to distribute the weight, the wall on the two sides, and the pier and lintel and the column, receiving the weight, and together bearing the strain. But the principle of the true arch is lacking.

This leads us to the subject of the arch. It was formerly the opinion that the earliest form of the arch was the triangle, the very one presented in this gateway. Recent explorations in Babylonia, have, however, brought to light an arch made of brick, which has the keystone, and so is a true arch; and Dr. Hilprecht claims that it was executed about 4000 B. C., and was built over an aqueduct or drain, but was fifteen feet below Naram Sins pavement. This arch presents peculiarities which are of special interest, provided it was built at the time assigned to it. Dr. Hilprecht says:

It was constructed of well-baked brick, measuring  $12 \times 2\frac{1}{2}$  inches, laid on the principle of radiating voussoirs. The curve of the arch was effected by wedge-shaped joints of simple clay mortar, used to cement the bricks. On the top of its crown, was a crushed terra-cotta pipe, intended to give exit to the rain water. It is supposed that the tunnel, which was used for a drain, was made to support all of the superincumbent mass, by this remarkable arch. The walls of the tunnel were built with remarkable care, the lower courses being placed flat-wise, while the upper courses were up and down, like the books on a shelf.

The lowest real brick structure was about thirty feet above the undisturbed soil; in other words, about the level of Naram Sin's pavement, in the temple mound. A corbelled arch of crude bricks, and a vaulted cellar of burned bricks, the latter about twelve by eight feet in length and breadth, were discovered somewhere at a low level in the same mounds. From general indications, I should ascribe them to about 2500 B. C. They give evidence to the fact that arches and vaults were by no means uncommon in ancient Nippur.

The city became an especial place of worship, the temple court provided with a solid pavement and high walls. It presented this character for over 3,000 years. Nine strata can be distinguished, more or less accurately, in the temple court. The *debris* constituting the different strata, representing nearly 3,500 years of history, and including the pavement of Naram Sin, measures only from seventeen to nineteen feet in the temple court.

## EXPLORATIONS AND DISCOVERIES.

A large number of sculptured lion figures have been discovered by Dr. Koldewez at Babylon.

A number of prehistoric mortars, pestles and weapons have been found fifty or sixty feet below the surface, at Grant's Pass, Oregon.

Prof. Nathaniel Schmidt, of Cornell University, has been appointed Curator of the American School of Archæology at Jerusalem.

Another expedition to the Northwest Coast is to be undertaken by the Museum of Natural History of New York, under the direction of Mr. H. I. Smith, the well-known archæologist.

The Celtic tribes, or the ancient Irish, had a heraldry of their own, by which the various tribes were distinguished, and wore different colors, but they had no coat of arms for the whole land.

Dr. J. W. Fewkes has returned from the West Indies, with a large number of stone collars, idols and curios, and a very remarkable ceremonial axe, cut in the form of a human being.

A collection of Greek and Roman antiquities, belonging to the prehistoric or Mycenaean portion of the Bronze Age, resembling articles found at Troy, are in the possession of Mr. Percy Scott, of England.

The very chariot in which Pharaoh rode at Thebes has been found. It is one of the finest specimens of art. It is covered with *papier mache* and stucco, and is carved inside and out with scenes from battles by Pharaoh.

A singular system of ancient ditches, embankments and stone walls in Mills Township, Mass., have been explored. Mr. Clarence B. Moore found a large number of pottery vessels in Florida, which indicate a new phase of culture.

The "Records of the Past," May, 1903, has an article on the Hittite Ruins at Hilar, Asia Minor, by Ellsworth Huntington; another on Rock Sculptures in Coele-Syria, by Mrs. Howie; also an account of Delitzsch's discovery of Hittite gods and stelæ at Babylon.

The first season's excavations at Argos, Greece, conducted by Mr. Vollgraff, have uncovered the ancient citadel, with walls of various epochs. A bouleuterion, a royal palace, five bee-hive tombs, one of which is adorned with paintings, cisterns, a small temple of the classical period, inscriptions relating to a sanctuary of Apollo, various terra-cottas, vases, statuettes, architectural fragments, etc., have been found. The remains of the Mycenaean period are the most important.

An archæological discovery of great interest was made recently in a bog in the northern part of Zealand, Denmark. It consists of a well-preserved bronze chariot for votive purposes, with the figure of a horse about ten inches long in front, and showing an image of the sun of about the same measurement, and inlaid with gold on the one side, placed just behind the bronze horse. The rich spiral ornaments, which cover both sides of the sun image, seem to indicate a very early date for the find.

The Peabody Museum during 1901-1902 published Mr. Gordon's report on the Hieroglyphic Stairway at Copan, and Mr. Teobert Maler's report on Explorations in the Umasintta Valley. Mr. Edward H. Thompson continued his Researches at Chichen Itza and his Special Studies of Mural Paintings. Mr. A. M. Tozzer, a graduate, prepared a copy of the Sand Paintings of the Navajoes, a *fac simile* of one seen by Dr. W. Matthews, twenty years ago. Mr. D. I. Bushnell discovered and secured a large number of specimens of pottery from Missouri, and studied the Human Footprints near the famous Mastodon Bone-Bed, and made a plaster model of the Cahokia Mounds.



## BOOK REVIEWS.

- DIE BRAUT MUSS BILLIG SEIN. By Friedrich S. Krauss. Leipzig: 1903. J. Schumann. 16<sup>o</sup> pp. 64. 2 mks.
- AUF UFERLOSER SEE. Branislav Gj. Nusic: translated into German by Friedrich S. Krauss. Leipzig: 1903. Ad. Schumann. 12<sup>o</sup> pp. xxviii, 114. (*Band 1 of Bibliothek ausgewählter serbischer Meisterwerke*).
- STREIFZUGE IM REICHE DER FRAUENSCHÖNHEIT. By Friedrich S. Krauss. Leipzig: 1903. Ad. Schumann. Parts 1, 2 and 3, of 16 pp. each. 8<sup>o</sup>.

Dr. Krauss is well and favorably known for his industry in studying the folk-lore of Central Europe. He has made known much that is curious and interesting regarding the South Slavs, the Jews of Austro-Hungary, etc. Recently he has undertaken a variety of works dealing more directly with ethnography and culture history. His general ethnology—*Allgemeine Methodik der Volkskunde*—is still a new book. And, now, we receive three yet later works of his writing or editing—*Die Braut muss billig sein*, *Auf uferloser See*, and three parts of *Streifzüge im Reiche der Frauenschönheit*. *Die Braut muss billig sein* is called a Bosnian song-play. The scene is laid in Bosnia in the beginning of the seventeenth century. The play presents a vivid picture of the life and ideas of the time and place, at once Christian and Mohammedan, European and Oriental. The details are carefully and consistently wrought. Love, bride-sale, and the survival of bride-stealing, form the gist of the story. Krauss is himself a poet and, in giving the piece a popular form, and adapting the thought and German words to an oriental rhythm and arrangement, he has shown great skill. On the whole the little song-play will please, while it will also give a clear idea of the circumscribed life of the little boys in their unimportant strongholds, and of the larger life of the higher Mohammedan officials, with its barbaric splendor and luxury.

With *Auf uferloser See*, Dr. Krauss begins the publication of a *Library of Selected Servian Masterpieces*. No one is better fitted to perform the difficult task of introducing Servian literature to a larger public. Thoroughly familiar with the Servian language, a profound student of the history and folk-lore of Servia, intensely sympathetic with the people and its thought movement, Dr. Krauss presents a rarely strong combination of qualifications. In his editorial introduction to this first volume, Dr. Krauss states how he came to undertake the editorship of the series, and gives an interesting sketch of the existing condition of literary work in Servia. The activity is great and there are many good authors. Twenty magazines or journals of a literary character are supported, and much of their contents would be creditable to any nation. Criticism is anonymous and bitter to an extreme. Dr. Krauss then presents a brief statement regarding Nusic's life and writings. In his discussion of Servian literature Dr. Krauss emphasizes the fact that there is not any formal and crystallized literary language in Servia, but that writers use the simple and direct speech of the people. In translation he seeks to use equally direct, simple and hearty German. The result is pleasing. From *Auf uferloser See*, we judge Nusic to be truly a great writer. The drama consists of four acts, each of which is broken up into many brief scenes or passages. Notable skill is displayed in confining the whole action to a single room, and to a few, naturally associated actors. The motives, influences, and impulses from outside need no depicting, they are instantly inferred. The climax of the simple drama comes at the close, and is startling and unexpected. We may not here go into particulars. It is enough to say that it is the story of a wronged husband, who from love for his child, decides to endure in silence.

The emotions, struggles, resolves, and strange plans of a strong—though not brilliant—man and the strangely mingled motives and impulses of a beautiful and ambitious woman, are detailed. If there are many writings in Servian literature so fine and strong as this, we may well be thankful to Dr. Krauss for undertaking his new labor.

Three parts of *Streifzuge im Reiche der Frauenschönheit* have appeared, and others will rapidly follow. It is the study, by a man who is at once a poet, an ethnologist, and a folklorist, of female beauty. In what does feminine beauty consist? What constitutes its potent influence? What difference of ideal exists from people to people? The history of man's attitude to woman is discussed; verdicts regarding woman's beauty embodied in proverb and trite saying are presented; a remarkable collection of the expressions of thinkers, poets, artists and philosophers—from Plato to Eduard Kulke—regarding female charms is gathered and arranged. It is, of course, impossible to review any work from its first chapters, but this work promises to be a real contribution to knowledge. It will be completed in twenty parts, and will be illustrated by three hundred or more pictures from original photographs.

L'ARCHEOLOGIE AMERICAINE ET LES ETUDES AMERICANISTES EN FRANCE. By Léon Lejeal, Paris: 1903. Maresque. 8° pp. 23.  
ETUDES ALGIQUES. Comte H. de Charencey. Paris: 1902. 8° pp. 48.

M. Lejeal is Professor of American Antiquities in the *College de France*, occupying the chair newly established by the Duke of Loubat. In the brochure before us, we have the opening lecture in his course. After an appropriate recognition of the liberality of the duke in his endowment of the chair and a brief mention of the many other ways in which the founder has encouraged American studies, Lejeal proceeded to demonstrate the importance of such studies and summarize the work by Frenchmen in that field. He briefly sketched the state of culture presented by the Aztecs and other populations of Mexico and Central America, and indicated some of the important questions and problems, which are presented for study. He showed how important has been the work of French explorers, missionaries, and scholars. Their work began with the earliest years of American exploration and has continued to the present. De Gonneville, about 1503, described the life and customs of the Carijo Indians. He was the first of a long line of French ethnographers who have dealt at first hand, with American peoples. Thetvet, in 1592, was charged with the care of the royal collections of American curiosities. Mocquet, who followed him, gave "illustrated lectures" before the court, among other things practically illustrating the making of fire by friction of two pieces of wood. A long line of successors connects these men with Aubin, Charnav, Brasseur de Bourbourg, Hamy, and a host of other recent French "Americanists." Indeed, it is in France that the well-known Congress of Americanists had its beginning. After such a record in this field of science, it is surely happy and appropriate, that this new chair of higher learning has been established. American students extend to M. Lejeal a hearty greeting, and wish him great success in his new work. In closing, we remind our readers that the Duke of Loubat has now endowed three such chairs—in Berlin, where Dr. Eduard Seler is the appointee; in Paris, where Léon Lejeal is in charge; in New York, where Columbia University has been given \$100,000 as an endowment, to the enjoyment of which Marshall H. Saville has been named.

The Count de Charencey is an indefatigable worker in American ethnography and linguistics. In his latest *Etudes algiques*, he presents three papers dealing with Algonkin languages. In the first, he studies the existence of the auxiliary verbs, *to be* and *to have*, in those tongues. It is well known, that these verbs, though so constantly used among ourselves, are conspicuously absent from the languages of the lower cultures, and that they can usually be traced (when they do occur) to some verb of simple action. Charencey believes that, in Algonkin languages, these words were actually wanting until recently, and that those now coming into



use *are* derived from actual verbs of action. In his second thesis, our author makes a quite extended study of Basque and Algonkin conjugations. Not so much in the words, as in the way in which they are modified to give tense and mood, the resemblances are so numerous, peculiar and striking, that Charencey believes they indicate actual relationship between these languages, now separated by a great ocean's breadth. In the third paper, *Of the Adjective in the Berber and Algic Dialects*, he extends his comparison to take in the languages of Northern Africa, akin, for him, to both Basque and Algonkin. Even one, who may not commit himself to Charencey's conclusions, must admire the ingenuity and industry of the great student.

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FAMILIAS LINGÜÍSTICAS DE MÉXICO. By Nicolas Léon. Mexico: 1902. Museo Nacional. 8° pp. 114.

We have already called attention to Dr. Léon's earlier paper with this same title. The first part of the present essay may be considered a reprint of the preceding paper, with a little inserted matter. To this is added some new material (vocabularies and texts) of the Zapaluta, Chañabal, Tzendal, Tepehua, Othomi, and Cuiclateca. This is useful and interesting material, but the most important features of Dr. Léon's matter are a new linguistic map of Mexico and a graphic synopsis of Mexican linguistic families, languages, and dialects. While anything in the way of a map or synopsis of Mexican languages must rest on the work of Orozco y Berra (and Pimentel) much new material and some new ideas have been accumulated by later workers. Among such later workers are Francisco Belmar, Alberto Santoscoy and Dr. Léon himself. Their contributions are included in Dr. Léon's map and synopsis, increasing their value and bringing both up to the present condition of knowledge. Almost one-half the work before us, is by Alberto Santoscoy, the well-known historical and literary writer of Guadalajara. His part consists of two open letters and one personal letter written to Dr. Léon. They deal with the languages spoken formerly and today, in the area of the old Bishopric of Guadalajara. Taken together, they form the most serious and comprehensive linguistic study for that area, and one of the most important discussions of a limited field in Mexican linguistics, that has appeared for many years. It is a pity that they were not separately printed, with full credit given to their author on the title page, rather than attached, in the nature of an unmentioned appendix, to the work of another.

FREDERICK STARR.

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THE NATIVE LANGUAGES OF CALIFORNIA. By Roland B. Dixon and Alfred L. Kroeber. Reprinted from the American Anthropologist, January-March, 1903.

"America is a region of great linguistic diversity, but this tendency reaches its climax in California, for nearly half of the linguistic families of the United States occur within this area." Such is the startling statement made by the authors of this pamphlet, who seem to have made a special study of the California languages, and to have compared them with other native languages on the Pacific coast, as well as those formerly spoken by tribes on the Atlantic coast. They say that the California languages may be classified into several groups, taking their structural character as a basis of classification. They use the term "incorporation," which is a rather blind term to most persons; but, as we understand it, it consists in making the relation of the subject and the object of the sentence sufficiently clear by the verb, alone, thus rendering any further expression of this relation by case endings, unnecessary. In regard to the possessive relation, in certain American languages this is expressed by the possessive pronoun; it others, in is expressed by case inflections. The Esquimaux is very strictly an incorporating language. It has a form of the possessive case.

A fourth feature comes under the head of phonetics. The California languages are smoother and softer than other American languages, thus we



have the incorporation syntactical cases, oppositions, and phonetics, as the basis of classification. Of the incorporation, we have three types, all of which occur in California languages; the most complete being found in the Athabascan, and contiguous languages; the less complete in the Karok, and adjacent languages, and the non-incorporated in the Klamath, Shoshonean, and adjacent languages.

In reference to cases, the California tribes differ, some of them use the possessive case; others, the objective case, and still others, the locative. In reference to number, several languages lack plural forms, and a few show the dual number. The distinction of sex, or gender, is found nowhere in California.

Of the linguistic stocks of Oregon, three occur in California—Athabascan, Shoshonean, and Lutuami. The Chinook and the Selish are totally unlike California languages. A small root of five stocks constitute a well-marked linguistic type, and are distinct in culture. The extensive use of canoes, the importance of salmon as a food, and the peculiar forms of art, in Southern California the yokouts and the maidu are the most prominent.

The comparative study of the American languages has been delayed far too long, but a good field for it still remains in California, for the tribes here remain isolated, and retain their native languages. The languages of the Eastern tribes were fortunately studied by Galatin, Dr. Horatio Hale, Dr. D. G. Brinton, and A. S. Gatschet, but their successors are few and far between. It is, therefore, encouraging that younger men, who have but recently come from school, are turning their attention to this study.

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EXPLORATIONS IN BIBLE LANDS DURING THE NINETEENTH CENTURY.  
By H. V. Hilprecht. Philadelphia: A. J. Holman & Co.; 1903.

This book has been received with a great deal of éclat, but with a certain amount of reaction, as the attitude which the author has taken toward the chief of the expedition, has given rise to considerable comment. In fact, the manner in which he has treated the explorations of others, has had a tendency to destroy the confidence in his own interpretations. It is certainly strange that in Babylonia nearly all the principles of architecture should be known and used so long before they were on the shores of the Mediterranean. It has been known a long time that there were arched drains underneath the ziggurats, but the fact that the arch was used for drains precluded it from being used as an architectural ornament, until quite late in history. But this could not be said of the gateway, or the column. When, therefore, we are told that there were gateways in Nippur, with passageways for cattle in the center, and for foot-passengers on either side, and through these gateways there were roads with sidewalks, and balustrades, which date 3000 and 4000 B. C., our credulity is taxed. We begin to doubt Dr. Hilprecht's interpretation of the tokens. When it comes to the matter of cuneiform inscriptions, it will be acknowledged that the book is an authority, but it is very seldom that a linguist is a good archæologist; and it seems very likely that those who spent years in digging and exploring the ruins were entitled to some confidence and respect, notwithstanding their lack of knowledge of the cuneiform language. The qualifications of a linguist are so unlike those of an archæologist, that they are very seldom united in one person, and it is certainly not becoming in anyone to speak *ex cathedra* on departments which are so separate and distinct one from another.

There is no doubt that civilization began in Babylonia much earlier than it did in Greece or the islands of the Mediterranean Sea, but it hardly seems plausible that 2,500 years should have elapsed between the dawn of the Babylonian civilization and the Mycæan civilization, for the distance is not so very great, nor were the expeditions few. It will be, to use his own language, wise to refrain for the present entirely from such untimely speculations until the characteristic features of at least one of Babylon's most prominent ziggurats have been established by pick and spade, and the comparative dates of the earliest layers have become known, so that we

can follow the succession, and correlate them with the earliest structures which have been brought to light by the discoveries in Egypt, Crete, and in other localities.

It is worthy of notice that nearly all of the archæologists, who have been making such remarkable discoveries, have been obliged to modify their conclusions. Dr. Petrie, who has written so much about the "new race" in Egypt, now acknowledges that they were not a new race, but Egyptians of an earlier date; and Mr. A. H. Sayce, who has written so much upon the Hittites, now acknowledges that they were the ancestors of the Armenians.

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PRELIMINARY SKETCH OF THE MOHAVE INDIANS. By A. L. Kroeber  
New York: Putnam's Sons; 1902.

The country of the Mohaves lies on both sides of the Colorado River, but joins that of the Pueblos, Navajos and the Apaches on the east. They live in a semi arid region. They have no large settlements, but construct four sided houses. They manufacture pottery and baskets. They lack the totemic system; their religion consists in a belief in supernatural dreams and superstitions about objects; their mythology consists in stories about the sky and the earth. The art of the Mohaves consists of pottery decorated with rain-clouds and rain-bow patterns, in which they imitate the Pueblos.

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THE ANCIENT BASKET-WORKERS OF SOUTHWESTERN UTAH. By G. H. Pepper, Assistant in the Department of Anthropology. Supplement to American Museum Journal. Vol. II. April, 1902.

The home of the Basket-Workers is in the midst of the Cliff-Dwellers, but the people differ from the Cliff-Dwellers in that they are older, or earlier, and dwelt in a cañon, which is remote and separate from all the rest of the country. They were discovered by Richard Wetherell. A collection of the baskets has been gathered by Pepper and placed in the American Museum, New York. Many of these are very finely wrought; the majority of them are food trays; a few of them are coiled, resembling large bowls. There are also small storage baskets, drawn in at the top, and almost globular in shape. The pamphlet is well illustrated, and is a valuable addition to the archæology of the West.



THE CAHOKIA MOUND AND ITS SURROUNDINGS.

[Kindly loaned by "The Records of the Past"]





MOUNDS NEAR THE CAHOKIA MOUND,

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RUINED CITIES IN HONDURAS.

BY STEPHEN D. PEET.

We have given in a former number a description of the buried temple in Honduras, and of the frescoes contained upon the walls. We propose now to draw the comparison between these frescoes and the sculptured stelæ found at Copan and elsewhere.

The general design of this temple painted on the stucco, appears to be continuous around the building, and represents first, a battle; next, the prisoners being led captive, some of



ORNAMENTED WALL OF BURIED CITY IN HONDURAS.

them were in torture; finally, the worship of Quetzalcoatl, and the offering of sacrifices to the God of Death. The scene is divided as follows: first, eight figures in the last half of the north wall, represent the prisoners; the west half shows the worship of Quetzatcoatl, the god himself being depicted at the western extremity of the wall, elaborately dressed and ornamented. On the west wall, two heads and other objects are being offered to the Mexican God of Death. The figure offer-





FRESQUES ON THE WALLS OF A BURIED TEMPLE.

ing the heads—one in each hand—is obviously one of the victors, but there appears to be little or no difference between the appearance, dress and ornamentation of the conquerors and that of the prisoners, which would indicate that the combatants were, if not of the same, at least of kindred nations. This mound-covered temple was constructed entirely of large blocks of limestone, and it is unknown what age it belongs to. It may have been built during the migration of the Toltecs, who took a long journey of a thousand miles, between the twelfth and fifteenth centuries. If so, it gives us some idea of the mythology of the Toltecs, and shows that they were as ghoulish in their form of worship as were the Aztecs, or any other later race. There is a remarkable resemblance between these figures and those found at Palenque. The facial profiles are similar, and the head-dresses almost identical, and there is a strong similarity in the gift, or offering, and the mode of presenting it. The Palenque figures appear to be standing upon the heads of some monstrous animals, with open jaws, which might be called a dragon, and offers a child to the bird divinity that rests upon the top of the cross. There is, also, a striking resemblance between those figures frescoed upon the walls of these buried temples, and those which may be seen in the various calendars, especially those which have the form of the tree, as the figure seems to be standing upon the head of a dragon. There is, however, a considerable contrast between them and the figures which are found at Copan, for here the altars are carved into the most grotesque and unnatural shapes.

A description of the columns and altars at Copan will, therefore, be appropriate in this connection: On the front of each stela is the representation



of an elaborately dressed human figure, the ornamentation throughout the sculpture is, without doubt, symbolical, but is derived from the following subjects: the feathered serpent, grotesque human and animal figures, feathers and feather-work, bands and plaits of some pliable material, loops and ties made from softer material, geometrical patterns. Foliations and vegetable forms are lacking. The dress and ornaments are similar to those shown by all the monuments throughout Central America, and somewhat similar to those found in the Codices. There is little to help us to determine whether the figures are the portraits of chieftains and priests, in ceremonial costume, or whether they are fanciful representations of culture heroes and deities. The exaggerations of the personal adornments would be likely to occur in imaginative figures, or they may have been copied from the adornments seen on the diminutive figures which are carried in religious processions; still, the waist cloths, turbans, head-dresses, moccasins, belts, capes, and other articles seem to be imitative of those actually worn, and the jewels and ornamental precious stones used in the costumes, are such as abound in the region. The designs of the ornamentation are numerous, those of the feathered serpent are by far the most important, but the serpent symbol has passed through the stage of ornamentation and conventionalism. The rattles of the tail are drawn as a conventional ornament to the drapery.

The following description of the stelæ at Copan, compared with the plates, may aid the reader in understanding the figures and symbols. The first one represents a female figure. It stands on the north side of the great plaza; the body is far too short for the size of the head and limbs. The face is beardless, the mouth slightly open, the forehead is receding, the hands held up over the breast-plate, the feet turn outward. The head-dress is composed of folds of some stiff material. At the four corners of the head-dress are serpent heads without jaws, a close-fitting cape covers the shoulders and chest, made of heavy flattened plaits, and a row of flattened plaits of beads, with a fringe of feathers. Over the chest lies a breast-plate, the heavy panel of the breast-plate has at either end an elongated serpent's head, from the open mouth of which issues the head and shoulders of a human figure. A necklace of beads hangs around the neck, with a medallion in front; the left hand, and part of the bracelet on the hand, can be seen. Around the waist is a girdle, consisting of a broad band, divided into panels, each panel decorated with a symbolical design. On the middle of the sides, over each hip, is a human head, or a medallion; hanging from the bottom of the girdle is a heavy fringe, formed from some pliable material; above each of the heads is a looped tie; under the chin is a stiff plate, and beneath there are heavy-folded tassels. Attached to the girdle, and hanging over it, are two bands, which reach around to the knees; from the cen-

ter of the girdle hangs an apron, ornamented with circles, bands, and dots. Broad bands, or garters, of beads and tassels are fastened around the legs, below the knees. The ornament of the ankles and sandals is similar to the bracelets, but knotted bands pass between the toes, and are fastened to the sandals. Above the plaited head-dress is a grotesque mask, or face; over each side of the head-dress is a grotesque human figure, with the feet resting on a serpent's head. A cord around the neck supports a breast-plate; the end of a cloth can be seen passing over the thigh and hanging down in front.

The next figure has the appearance of a Chinaman, the face is bearded and has what appears to be a moustache; the ears are furnished with pendants; the panel of the breast-plate is ornamented with two symbols; on the apron is a face. The head-dress has the appearance of a turban, the ornaments having the appearance of elephants' heads are at the corners, though they may be intended to be the head of tapirs. On the upper part of the trunk are small eyes, resembling those of the elephants; above these are small human figures.

Down each side of the stela are three other heads, with elephants' trunks. The peculiar ornaments seem to arise from the breast-plate in front of the face. The back of the stela is decorated with a huge face or mask.

Another stela, not represented by a plate, has the face covered with a mask, through which the eyes and mouth can be seen; the serpent's head and scroll appears above the top of the ear; the center face is absent from the girdle. The side view presents a serpent's form, extending up and down the stela; issuing from one of these is a grotesque face, with a mingled scroll. The cape, or breast-plate, seems to be made of a large number of flat stones, possibly jet; a sort of framework is fastened to the shoulder pieces in front of the breast-plate. Both hands are resting upon the breast-plate, with ornamental bands about the waist; the apron is elaborately ornamented, and has a fringe on its borders, below which hangs a series of folded tassels; the maxtli is elaborately ornamented, and hangs to the feet, terminating in a large bow; garters made out of precious stones are seen below the knees; the moccasins are held with ornamental bands around the ankles.

Another stela stands on the north of the detached mound, and faces the east. The want of proper proportions in the principal figure is conspicuous. An altar stands before this statue, which is worthy of notice. It has in the front a human face, with prominent forehead; beneath which are two glaring eyes, the eyelids swelling out, so as to make the ball of the eye still more prominent; below the eyes is a short, projecting nose, with nostrils open; and below this, four large teeth, the gums of which can be seen; the mouth lacks the lower jaw. The sides of the altar present other figures, which are difficult to describe, but show much of the sculptor's art.





STELA H—FEMALE FIGURE.





BACK OF STELA H.

There are three carved altars, which are not mentioned by Stephens. One of these has at either end a huge serpent or dragon's head, resting on two skeleton arms, with claw like hands; the upper jaw is furnished with recurved teeth, but out of the mouth protrudes a human figure. Both of the dragons' heads are fringed with feathers. Another altar is in the shape of an animal, the body of which forms an arch, connecting the two serpents or dragons' heads.

Stela H is a female figure, with a skirt hanging down to the feet, on which are moccasins, and a very high head-dress, made of feathers, and a mask above the head; the skirt was apparently tiger's skin, with a cross barred work, made of long and round beads. On each side of the mask is an arrangement of serpents' heads, with the lower jaw fringed with feathers and tassels; the sides are similar to other stelæ. From the top of the scroll, spring two entwined serpents, with human figures holding the body. The back of the stela is very interesting. It seems to be draped on the edges with feathers and rosettes; in the center is a grotesque mask, with large ears and bulging eyes, with a peculiar ornament between the eyes; below the mask is a plaited ribbon from which hangs an apron; in the upper part, above the mask, is the figure of a bird, whose claws are grasping a bar, with two plumed serpents. From the mask hangs a tongue. An altar stands near this stela, but it is difficult to make out the figures on it.

Stela I is very interesting. It is nine feet high, and two feet nine inches wide. The face is completely covered with a mask, with a bulging eye; the ears project beyond the mask; snakes' heads are seen below. The breast-plate is reduced to a line of fringed links, representing a serpent's body, and the serpents' heads at each end have human forms issuing from the mouth. The three faces in the girdle are very grotesque. Above the head is a grotesque mask, with square ears, and around these are plaits and scrolls, and serpents' heads ornamented with a fringe below.

Stela N is the most elaborately carved stela at Copan. On the front is a large human figure, standing in the usual position, hands raised to the breast-plate; above the head are plaited folds, and at the top a mask; on either side is a plaited ribbon; the forehead is cross-hatched and bound around with a cord, knotted and looped; above the loop is an ornament resembling the inner part of the jaw of a dragon; the shoulders are covered with a cape with flattened plaits; the breast-plate is of the usual form, but over it are grotesque figures, issuing from serpents' mouths. The bracelets, girdles, apron, and garters, all have medallions. On either side of the mask over the head is a dragon's head, turned towards the sides of the monument, with a tasseled ornament attached to the end of its snout. Above the dragon's head is a large double scroll; at the base are grotesque figures, crouched—half-man and half-beast.

This brings us to the contrast between the stelæ at Copan and the frescoes in the buried temple. It will be seen from the plates that the statues are finished in the round; that the persons represented seem to be well fed, and sensible of their power. They are almost hidden amid their adornments, for the head-dress, with its plumes and mask, reached as far above the head, as the necklaces, bracelets, belfs, breast-plates, sashes, and skirts, did below. The jewels and gems were everywhere present, finished in the highest style of art. On the other hand, the figures in the fresco, while they are furnished with head-dresses, bracelets, sashes, bands, and mantles; yet are in better proportions and more natural, but show the sufferings of captives, rather than the pride and power of kings.

The same contrast may be seen between the figures in the stelæ at Copan and those represented in the tablets at Palenque. In the latter place we see the cross as the most conspicuous figure, but it is attended on either side by priests, who were clothed in cotton garments and very plain attire. They seem to be offering gifts to the figures on the summit of the cross, and have the attitudes of those who are engaged in religious ceremonies. These contrasts illustrate the skill of the artists, for they very clearly represent three conditions of society: the pride and pomp of royalty, the humility and devotion of the religious leaders, and the abject state of the captives. The common people not having been regarded as worthy of notice. Still the same religious symbolism is everywhere seen.

There is a large number of altars and stelæ at Piedras Negras. These are placed near groups of buildings, which are mostly in ruins, and also near great pyramids, which rise from several terraces and form the substructure of several temples.

Adjoining the north side of one terraced pyramid is an extensive palace, with several courts, on the side of the main court are several entrances, which are arched over with triangular arches. Traces of painting are still visible on the plastered walls. In front of the temple were eight stelæ. The description of the stelæ is interesting, because of their resemblance to those at Copan and Palenque. In one the front view presents a male figure, carved in very high relief. Upon the brow is placed the serpent's head, the upper row of teeth forming a diadem. Above the serpent's head is the turban, from the center of which rises the ornamented feather-holder, and the plumes of feathers proceeding from it fall to the right and left. The god is clothed in a tunic reaching to his feet, ornamented with delicately incised Maltese crosses, and finished at the neck by a cape of scales. In his right hand the god holds feathers, and his left lies on the medallion of his cape.

Stela No. 2 represents a seated figure, sitting Turkish fashion on a bench, dressed and adorned like the figure in the preceding plate. On his head is a great ribbed turban.



Stela No. 4 represents a richly dressed person of rank, with a strangely trimmed head-dress, from which rise massive plumes. On the ground, to the right and left of the principal figure, sits a prisoner; the rope by which each is bound can be distinctly seen, and seems to be held in the hand of the standing figure.

Stela No. 8 represents a figure in full front; the dress and head-dress extremely elaborate, but resembling the female form at Copan; a richly ornamented upper garment has a border of sea-shells, and the loin-cloth is a network of cords. His head-dress is an enormous structure of scroll and feather work, very elaborately carved. The warrior holds a lance in his right hand, in his left he holds a shield. Captives are kneeling below, to the right and to the left, with hands bound.

Stela No. 9 is a richly-dressed chieftain, in front view, whose right hand holds a lance, surmounted by a death mask; his left arm, a shield and ornamented pouch. The short tunic has a fringe of sea shells, and over it falls a long scarf, which seems to be ornamented with shells. Above the forehead is a circular head-dress, to which is attached an ornament making an elaborate detail, from which proceeds spreading plumes of feathers. Above this is a mask, and great plumes of feathers proceeding out of it, thus giving to the entire head-dress the form of a cross; the arms and top of which are made of feathers, but the main part is made up by the figure itself.

Stela 13 shows a richly-dressed personage, scattering cocoa beans—a symbol of prosperity—with his right hand. His breast-plate made up of precious stones, a medallion upon the breast, the girdle and skirt, are very elaborately wrought. He wears breeches of tiger's skin, a red girdle with a red border of sea shells, and a very handsome face in front, from which suspends a long bow with ends. The helmet is ornamented in front with the head of an animal; in the back, with plumes and feathers. The figure furnishes every evidence of wealth.



SERPENT STAIRWAY AT PALENQUE.\*

\*This cut represents the Serpent Stairway at Palenque, but it shows how important a symbol the serpent was throughout Central America. It was, in fact, designed to impress all who looked upon it, with a sense of fear, and for this reason was carved upon the altars, which were placed before the stelæ, as well as upon the columns, which stood before the temples.

and shows that artistic skill had been bestowed upon the costume.

Among the nations of Mexico and Central America, whose civilization was similar, the priesthood always occupied a high rank in the state, and up to the last its members continued to exercise a powerful influence in both public and private affairs. In Anahuac the priestly office does not seem to have been appropriated exclusively by an hereditary class. All had an equal right to fill them. The ministers of the various temples, or the priests, were fitted for their career by being educated in the colleges to which they were sent in their infancy. The priests of noble birth obtained almost invariably the highest honors. The quarrels between the priests and the warrior classes, brought much harm to the Mexican nation, but the kings assumed the privilege of selecting priests, and placed at the head a priest or a warrior of high rank, as they saw fit.

At Tezcuco and Tlacopan, the superior pontiff was usually selected from among the members of the royal family, but in Mexico the office of high priest, like that of king, was elective. The priest-king, the Mexican god of sacred things, was by right high priest of Huitzilipochtli and the head of the church, and had absolute authority over all priests, of whatever rank. In the City of Mexico and other towns, there were as many complete sets of priests, as there were temples. Each had jurisdiction over a section in which the sanctuary or temple was placed; to each temple was attached a monastery, very much as it was in India. In fact, there was a great resemblance between the two religious nations, which were so far apart.

Divination was an especial study of the priests; some professed to foretell the future by the aid of stars, earth, wind, fire, or water; others, by the flight of birds, the entrails of victims, magic signs and circles. The species of parrot with flaming plumage, was worshipped in some districts. In this bird, a god was incarnated, who was said to have descended from the sky, like a meteor.

The ordinary dress of the priests was a full white robe. During the ceremony of sacrifice, he wore a kind of tunic with full sleeves, adorned with tassels and embroidered in various colors, with representations of birds and animals. On his head he wore a mitre of feather-work, ornamented with a very rich crown of gold; his neck, arms, and wrists were laden with costly necklaces and bracelets; upon his feet were golden sandals, bound to his legs with cords of gold and bright-colored thread.

There is a large number of ruined cities on the borders of Yucatan, which are in strong contrast to those described. The buildings in them are very much better preserved, and the architecture seems to be of a different type—more regular and with better proportions, and with very little of the grotesque. The buildings here are of stone, neatly squared and laid up in



STELA I AT COPAN.





STELA N—MALE FIGURE.

workman-like manner. They have the usual rectangular openings, or doorways, with stone lintels, supported by columns. Between the openings are banded columns, which serve as ornaments to the walls. Beyond these are heavy cornices, which project beyond the walls.

Mr. Teobert Maler has described these buildings. There is a building which Mr. Maler calls the "Inscribed Palace," situated at Xcalumkin; it has an arched corridor, similar to that of Palenque, in front of which are square doorways; but the posts, piers and lintels are carved with a very interesting and beautiful series of hieroglyphics. The building is in ruins, the roof of the corridor is thrown down and only one door left in its original form; but there are three piers standing and one lintel, all of them carved with hieroglyphics. While above the doorway and overtopping the whole building, is a very high roof, most elaborately wrought into open-work.

The most unique and beautiful of all the buildings described, is the one called "Dsibiltun"; it is a perfect gem. It might be called, perhaps, a square tower, as its height exceeds all its other dimensions; but it is ornamented from base to top, with the neatest and most artistic decorations seen in the whole region. These ornaments are of the usual pattern, made up of grecques and double grecques and cornices with short columns, but the proportion of one part to another, gives to the building a most artistic appearance. One of the ornaments, representing a hook projecting from a snake's head, is made in the conventional style, and so allies the architecture of this region with Copan and Palenque.

The buildings here bear names in accordance with the locality in which they stand. Mr. Maler has given names to the various buildings, which make known the use which he supposes they served, when they were occupied. One building, he calls the "House Palace"; another, he calls the "Temple Palace"; another, he calls "El Castalo"; another, he calls the "Figure Palace." The building with the serpent ornament, he calls the "Serpent Palace." The majority of these buildings have but a single story, and are rectangular in shape, with the usual high ornamental façade, or comb. One of them has two stories, and resembles the tower at Uxmal. The one called the House Palace is a solid building, which runs around the two sides of a court. The corner at which they meet has no passage-way, but in front of the long, single-story buildings are wide doorways, with four heavy columns with capitals upon them.

A very interesting building is described, which Dr. Maler calls "Dshkbatun." It is characterized by doorways, which are arch-shaped, after a different style. Ten such buildings are represented and described by engravings in Mr. Maler's report, each of them bearing names of the specific localities in which they stood. Besides these are five other buildings, which are built after a different style; one of them has open-

ings, or doorways, but with no columns, either below the cornice or in the entablature. In place of the banded columns are conventional figures, composed of grecques resembling the Roman key.

This finishes the description of the structures which have been recently visited and described by explorers; the most of them situated in Central America, from Mexico to Honduras, and as far south as Nicaragua.

A general review of the cities, their location, style of art, their age, and the period to which they belong, convinces us that there was greater variety than has been generally recognized. They are wonderful, when considered as the handiwork of a people since lapsed into a condition little above that of savages; for, in some respects, they compare favorably with the works of the ancient Greeks, Romans, Egyptians and Assyrians, but present a style of art and architecture which is peculiar to this continent, and must have originated among an aboriginal people. It was formerly a theory that the great palaces and temples were the work of a mysterious civilized race, who had become extinct, but there is no foundation for this. Bancroft says that traditional history represents Yucatan as constituting the Maya empire, whose rulers—secular and religious—reared magnificent cities, palaces and temples, and flourished in great power down to a little more than a century of the Spaniards' coming, when the empire was more or less broken up by civil wars, and the era of dissension and comparative weakness ensued. Some of the great cities were abandoned and left in ruins, but the edifices in most, and the temples, especially, were occupied by factions of the original empire. In this condition the Spaniards found and conquered the Maya people. They found the immense stone buildings and pyramids of most of the cities still used by the natives for religious services, although not for dwellings, as they had probably never been so used, even by the builders.

All the early voyagers and writers speak of the wonderful stone edifices found by them, in the country, partly abandoned and partly occupied by the natives. Nothing in the ruins themselves give any clue to the date of their construction. The history of the Mayas indicates the building of some cities from the tenth to the twelfth century. The natural advantages of the region would indicate that the country had long been occupied. As we go southward and reach the boundary of Honduras, the condition of the country changes rapidly from flat to undulating hills, increasing in height towards the Pacific, and retaining all the wonderful fertility and density of tropical forest growth, without the pestilential malaria and oppressive heat of the plain below. Here the aboriginal Americans reared the temples and palaces in the various cities, which became religious centers, ruled over by priests and kings alike.

This in a general way is true, and yet it is more in accordance with the facts and traditions to consider the cities as in-



dependent of one another, and so constituting the traditional center and religious home of the various tribes, and that there was no great empire to be found in the land. In this respect the cities resembled those of the far East, though there is no evidence that any such hegemony, as prevailed in Babylonia, existed here, though the various cities which were situated around the beautiful lake, and were ruled over by Montezuma and his relatives, resembled such a combination.

It is owing to the fact that the people were divided into tribes and had no unity, that the Spaniards were able to conquer them, one after the other. In conquered provinces, the habits and customs and established form of government, were usually respected. Many of the estates were of ancient origin, the lands of the nobility were either ancient possessions of the nobles, transmitted by inheritance from son to son, or were rewards of valor granted by the king.

This social organization, in which a few ruled over the many, would account for the existence of so many public buildings, such as palaces and temples, and so few remains of private houses. It will also account for the existence of so many statues or stelæ, so-called. Some have imagined that these represented personal divinities, but a more correct conclusion, is that they represented the kings and queens, who were regarded as almost equal to the divinities, and resembled the Incas in this respect. There were, to be sure, in each city many priests, who were supported at public expense, and who had charge of the religious education of the youth. They, however, contributed to the power of the king, and increased the servitude of the people. The very fact that the education of the youth was in their hands, and under their control, contributed to the servitude of the people. Another element that contributed to the same result, was that the priests were supposed to have control of the powers of nature, and were the representatives of the Nature Divinities. As a result, they directed the very industries and employments of the people; the calendar stone was interpreted by them, and the products of the soil were part under their control; the children were brought to the priests, and their destiny prophesied according to the signs on the calendar stone, the condition of the heavens on their birthday proving the key to the problem.

This belief that the priests had power over the Nature Divinities, led the people to consider them half divine. We can imagine the people going to their toil, from day to day, under the direction of the priest, convinced that the very operations of nature, and the progress of the seasons, were under their control. We can also imagine them as bringing the products of their labor, at just such times as the priests have directed; each article of commerce, whether of metal, of stone, of vegetable growth, of natural growth, or of the elements, corresponding to the symbols which were seen upon the calen-

dar stone, and were brought to market under their direction. The sites of the temples and palaces, and the statues which stood near them increased their servitude.

The art and architecture contributed to the same result, for the figures and forms of the Nature divinities, such as the serpent and the manitou face, were everywhere seen, and filled the minds of the people with strange superstitions. Serpent figures were carved upon the statues and the altars; their forms mingled with the drapery, and their open mouths protruded from the sides. But human faces looking out from serpents' jaws were especially suggestive of the supernatural power, which was mingled with the human power. We look at the graceful feathers, which were sculptured upon the columns and formed the head-dress of the kings and priests, and study their colors and see how true to Nature they are; but when we see the serpent forms winding in and out amid the plumage, and the glaring eye protruding from the sides of the stelæ and the ends of the altars, we are ourselves filled with horror, and do not wonder that the people were filled with superstitious fear when they approached the altars, or looked upon the statues.

There was probably a modification of this system as time went on, for while we find the ancient cities, such as Copan, Palenque, Quirigua and Tikal, full of these strange symbols; in the more modern cities, such as are found at Piedras Negras and Mitla, the architecture is more chaste, beautiful and symmetrical. The symbols have given place to conventional adornments, and the true principles of architecture have become prominent. Still, we cannot say that the progress of architecture ever released the people from their thralldom, for the powerful nations, who are the most advanced in culture, who go by the name of Toltecs, built up their capitals and established flourishing cities, make all the most beautiful products of their skill subject to the superstition which their priests constantly played upon. It could not be expected that the ruder people, such as the Aztecs, who came in their place, would be free from its power.



COPPER KNIVES AND CHISELS FROM WISCONSIN.





COPPER SPEAR HEADS AND SPUDS FROM WISCONSIN.

NOTES ON MEXICAN MUSICAL INSTRUMENTS—  
PAST AND PRESENT: WHAT WAS  
THE TECOMAPILOA?

BY FREDERICK STARR.

In his *Ancient Nahuatl Poetry* (pp. 20-26) Dr. Brinton described the various musical instruments of the ancient Aztecs. He mentions those included in the following list:

- (a) HUEHUETL, upright drum.
- (b) TEPONATZTLI, horizontal drum.
- (c) TECOMAPILOA, the suspended vase.
- (d) OMICHICAHUAZ, the strong bone.
- (e) TETZILACATL, sheet gong.
- (f) AYACACHTLI, rattle.
- (g) AYACACHICAHUALIZTLI, the arrangement of rattles.
- (h) TZILINILLI, copper bells.
- (i) ———, various flutes of reed, bone, and pottery.
- (j) QUIQUIZTLI, conch-shell trumpet.
- (k) AYOTL, shell of tortoise.

At the time of my reading his discussion I became considerably interested in these instruments and, during my repeated visits to Mexico since 1894, have been watching for original ancient examples, or for surviving forms used in modern Indian life. From time to time I have printed data regarding some of these instruments. On account of a recent, exceptionally important, find, which raises what seems to me an interesting question, I venture to here present some of my notes on the whole field.

Most of the instruments named in Brinton's list are still in use, either as modern pieces uninterruptedly continuing the past, or as carefully-preserved and highly-prized ancient instruments—usually the property of a whole village.

The *huehuetl*, or upright drum, consists of a cylindrical body of wood, across the top of which is stretched a membrane; the wooden body is so cut away at the bottom as to leave three feet for support. In the olden time it was made of fine-grained and heavy, hard, wood, the section of a tree trunk being hollowed out and then scraped until it was of rather even thinness at all parts. The regular instrument was sometimes more than three feet in height. A smaller form was called by the special name of *tlapanhuehuetl*—the half-huehuetl. The *huehuetl* was

played with two drumsticks tipped with balls of *hule* (rubber). Such an instrument stood in the great temple of Tenochtitlan, and was beaten at the time of human sacrifice. Bernal Diaz says: "Here we were for a time at rest, and engaged in relating the events which had happened at each post, when on a sudden our ears were struck by the horrific sound of the great drum, the timbals, bones, and trumpets in the temple of the war god. We all directed our eyes thither, and shocking to relate! saw our unfortunate countrymen driven by force, cuffs, and bastinades, to the place where they were to be sacrificed, which bloody ceremony was accompanied by the mournful sound of all the instruments of the temple. \* \* \* During each night of this period the enemy continued beating their accursed drum in the great temple; nothing can equal the dismal impression it conveyed. They were in the execution of their infernal ceremonies; the whole place was illuminated, and their shrieks at certain intervals pierced the air." ("The True History," Keatinge's trans., pp. 300-303.)

Perhaps the finest ancient *huehueltl*, now preserved, is in the museum at Toluca. Until 1892 it was the property of an Indian town in the State of Mexico and was regularly used in the village festivals. It is cut from a single piece of fine-grained, heavy, dark wood, and measures thirty-eight inches in height and sixteen inches in diameter. The exterior is carefully carved with figures of warriors, time symbols, etc., etc., in fine workmanship. Although I made a series of photographs of these designs in 1895, I shall not describe them here, as Señor Eufemio Abadiano is preparing a detailed study of them. This gentleman has made an admirable plaster copy of this interesting piece, which may be studied at the National Museum in the City of Mexico. *Huehueltls* are still made in several regions in Mexico. They are rather common, and of large size, in the State of Tlaxcala. These modern examples are usually made by fitting together narrow boards, in an upright position, instead of hollowing out a tree trunk section into a thin shell. They are generally painted—green or blue being favorite colors—and the national eagle is not rarely represented in decoration. (See my "Notes on the Ethnography of Southern Mexico," Part I., pp. 35-37.) A small *huehueltl* is used in certain dances in Aztec towns in Vera Cruz, as Tamalin. See "Notes," Part II., p. 8.) Curiously, both in Tlaxcala and Vera Cruz, the old name of the upright drum is largely forgotten, being replaced by that of the horizontal drum, the *teponastl*.

The *teponastl*, or horizontal drum, was a favorite instrument and is often represented in the ancient Mexican pictures. It was mounted on a support and played with sticks tipped with rubber, the player standing while he performed. The instrument was made from a block of heavy wood, cylindrical, or slightly tapering at the ends. The two ends of the block were left solid, but its middle section was hollowed out from below,



leaving but a thin wooden shell above. A cut, **I**-shaped, in this, left two lips of thin wood, projecting from the solid ends, so as to nearly meet in the middle. The beating was done upon these lips, the noise produced by their vibration being reinforced by the air of the open space below. The true *teponastl*, of large size, still lingers here and there in Mexico. A description of one and a statement of superstitions connected with its manufacture and use may be found in the *Journal of American Folk-Lore*, Vol. IX., pp. 162-163. The specimen, secured at Guadalajara, had been used in a neighboring village in popular celebrations. The *teponastl* of today is frequently accompanied by the *chirimiya*, as is also the *huehuatl*. A pretty little *teponastl*-like instrument is still used among the Tepehuas and Totonacos in the region where the states of Hidalgo, Puebla and Vera Cruz touch. The instrument is only eight or ten inches long, and is of cylindrical form; it is cut from woods of notable weight, hardness, and sonorous quality; it is carried in the hand and struck with a simple stick; the sound produced is truly agreeable. (See "Notes," Part I., p. 85.)

In Brinton the *tecomapiloa* is described as "a much superior instrument to the *teponatzli*, and doubtless a development from it \* \* \* the suspended vase (*tecomatl*, gourd or vase, *piloa*, to hang or suspend). It was a solid block of wood, with a projecting ridge on its upper surface, and another opposite, on its lower aspect; to the latter one or more gourds or vases were suspended, which increased and softened the sound when the upper ridge was struck with the *ulli*. This was undoubtedly the origin of the *marimba*, which I have described elsewhere." (l. c., p. 23.)

We will merely say in passing that we cannot agree with Brinton's suggestion regarding the origin of the *marimba*, which we believe to be African, imported within historic times. As to the *tecomapiloa*, the only reference he gives in connection with his description is Sahagun: Hist. Bk. II., ch. xxvii. It is worth while to quote this: "the women go playing upon a *teponastl*, which has only one tongue above and another below, and to that below is carried, attached, a *jicara* (in which they are accustomed to drink water), and thus it sounds much more than those which have two tongues above and none below. This *teponastl* they call *tecomapiloa*, carrying it under the arm as they play it, because it is made in this manner."

We have diligently sought for an instrument, now in use, which should correspond to Brinton's description. No block of wood, with lip ridges projecting above and below has been found, nor has any Indian population recognized the description. We have found a vase serving as a musical instrument among the Mixes. At San Juan Guichocobi this is called a *maiya*. It consists of a two-bodied, brownish-black earthen vessel, the round bodies being one above the other; over the aperture at

the top of the upper body is stretched an iguana skin. (See "Notes," Part I., p. 62.) The instrument was a simple drum.

The *omichicahuaz* has recently had its full share of attention. Lumholtz, securing examples in Tarascan territory, failed to recognize their use. ("Marked Human Bones from a Prehistoric Tarasco-Indian Burial Place in the State of Michoacan, Mexico.") In the "Proceedings of the Davenport Academy of Sciences" I criticized his views and identified his "marked bones" as examples of the *omichicahuaz*; I also compared the instrument with a series of analogous notched rattles, rather widely used among American tribes. At about the same time, Dr. Eduard Seler published (Globus, August, 1898) a remarkably interesting article advocating similar views to mine. Since these papers, other examples of this type of instrument—both ancient and modern—have been published. ("Proc. Dav. Acad. Sci.," May 4, 1903.) Lumholtz, himself, seems to have given up his early views on the matter, and in his "Unknown Mexico" refers to his original examples, to present use of notched rattles among Tarahumares and Huichols, and to the votive terra-cotta examples presently to be mentioned. The ancient *omichicahuaz* was a long bone, human or animal, deeply notched by a series of transverse cuts: it was rasped across by a smaller bone in order to give time to dancers. Brinton's description is erroneous in stating that "it was channeled by deep longitudinal incisions." The authors to whom he refers give him no ground for such an assertion. We will add nothing further regarding the *omichicahuaz*, save that its use survives in the popular fiestas of Holy week, at Tonantzintla, State of Puebla, where the bone used is a human femur.

No modern examples of the *tetzilacatl* or of the *ayacachihualiztli* have been identified, nor do I know of actual ancient originals. Dr. Hamy ("Revue d'Ethnographie," Vol. II., pp. 438-451) gives an interesting suggestion regarding the latter, of which he thinks he identifies a representation in a carved figure from the Uhde collection.

The *ayacachtli*, or rattle, made in ancient times in a variety of forms from various materials, is still in common use everywhere. Today it is made, as formerly, of gourds, nuts, leather, horns, etc. Some are brilliantly colored and lacquered, like those of Chiapa. Often they are decorated with ribbons or bunches of bright feathers. It is unnecessary to more fully describe these simple, and widely-used time-beaters.

The copper bells—and their shell and pottery prototypes—have not been found actually in use. But truly musical bells of black pottery, made at Coyotepec, are sold in the Oaxaca market. These vary considerably in size and form.

The flutes, fifes, pipes, and whistles of the older days varied in form, size, and material. Many different native names were applied to them. The modern Indians have pipes of cane (*pitos*), whistles of pottery and the *chirimya*. (See "Notes,"

Parts I. and II.) This last instrument is somewhat like certain European wind instruments. In the mouthpiece is a bit of folded leaf, serving for a vibrating reed; there is a series of escape holes along the side, giving a range of notes. The instrument varies much in form, size, and fingering. One of the simplest forms was found at Mitla, among the Mixteco-Zapotecs. The noise of the *chirimiya* is shrill and loud. In *fiestas* it is usually accompanied by the *teponastl*, the Spanish *tambour* (drum), or both. In some of its forms it so closely resembles European instruments, as to raise a question as to its actual aboriginal character.

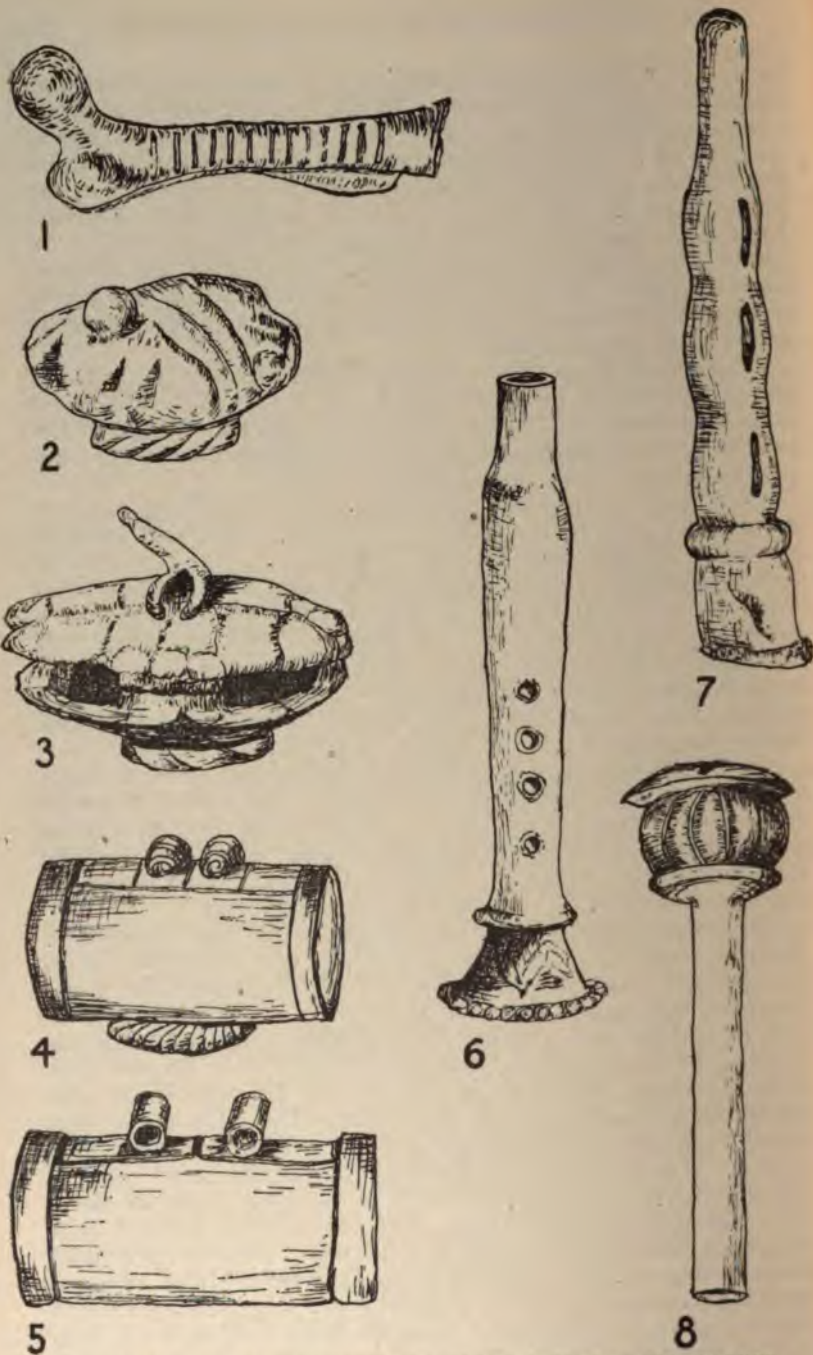
The *quiquistli*, or conch-shell trumpet, was widely used, and ancient specimens are often found. It is said to be still used in many parts of the Mixteca and the Chinantla. While we believe it is in use there and elsewhere in Mexico, we never happen to have come upon a specimen in use.

The *ayotl*, or tortoise shell, was used as a drum, and was quite commonly beaten with a deer's horn. It is still used in southern Mexico and Central America. The Tzendals of Cancuc employ a great turtle shell, slung by a belt or band from the shoulder; they beat upon it with two leg bones of a deer. In the *Xtoles* dance, at Merida, Yucatan, a band of native musicians is fitted out with the truly aboriginal equipment of *pito*, *huchuctl* and turtle shell, while the dancers carry rattles. The turtle shell, they employ, is small and is struck with a deer's horn. (See "Notes," Part II., pp. 12, 19.)

It will thus be seen that most of the ancient Aztec musical instruments, named by Brinton, survive in use among Mexican Indians of today. It is not my purpose in this article to describe certain other musical instruments, which are used by modern tribes of Mexico. We have time only to examine the old instruments and their modern representatives.

No more important archæological event has occurred in Mexico of recent years, than the discovery of the débris of the ancient temple, during the sewerage excavations along Escalerillas street, in the City of Mexico. Several important papers dealing with the find have already appeared from the pens of Batres, Peñafiel, Seler, and others. We do not propose to discuss this find as a whole, but desire to speak of a single group of objects. At one point in the excavations was found a cluster of little pottery objects—all in one plain, red, ware. All of them were miniature representations of musical instruments or other objects used in dancing; none of them were intended for actual use. The inference is natural that they were votive offerings left at the temple, perhaps by a band of musicians. However this may be, they are of great interest, and all the chief musical instruments are represented, except the *huchuctl*. The absence of this, the truly temple drum, is in itself suggestive. In the case of all instruments intended to be beaten, the beater is present. The instruction value of this





TERRA-COTTA MINIATURES OF AZTEC MUSICAL INSTRUMENTS.

series is clear. In our plate one of each type is represented. These are not drawn in exact proportion, but will not seriously mislead.\*

We may now comment upon these in detail. Figure 5 is a *teponastl*, with a flattened base: the two beating sticks are laid across the lips, on the top; the specimen presents no remarkable features. Figure 4 represents another *teponastl*, of cylindrical form; apparently on account of its rounded under surface, it rests upon a supporting ring, perhaps of fibre; the beaters are of quite a different form from those of the preceding, and are laid upon the lips. Figure 3 represents the *ayotl*, or turtle shell, and the deer-horn beater; this, like the preceding, rests upon a support ring. In Figure 1 is represented the *omichicahuaz*, and laid alongside of the notched long bone is the smaller bone or stick with which it was rasped. In Figure 8 an especially interesting form of rattle is shown; it looks like a poppy-seed vessel; it is uncertain what species of plant capsule was used as a rattle, or suggested the form, but undoubtedly some kind did. Figure 6 shows one of the pottery flutes or pipes; these are common relics in all Mexican collections, and several writers have discussed their musical possibilities; this specimen is nearly the actual size. The object represented in Figure 7 is probably not a musical instrument; it appears to be the wooden, central, part of the famous war-sword, *maccuahuitl*; this consisted of a flattened blade of wood, grooved along the edges for the insertion of sharp obsidian, flakes. Not only were such war-clubs carried in ancient dances, but copies of them are still carried in dances of today. In "Duran," Plate XIX., a dancing scene is represented in which *huehuettl*, *teponastl*, rattle, and this war-club are all in use; curiously the rattle is almost precisely of the type here shown. No doubt a *maccuahuitl* was regularly carried in the celebrations conducted by the musicians, who left these votive offerings at the temple.

Figure 2 remains unexplained. It does not in the least agree with Brinton's description of the *tecomapilola*; little better does it accord with Sahagun's description. Still, I suggest that it is my long sought *tecomapilola*. It is certainly a musical instrument; it is certainly a vessel or vase; it was beaten with a round ball, which is represented in the pottery miniature. Whether the round ring below the jar is a supporting ring, or the neck of the jar itself, I do not know, but incline to the latter opinion. If we had the drawing, which I had planned, it

\* We did not measure these, when working on them in the National Museum, as we supposed we should have a series of plaster reproductions of them made, from which the plate would be drawn at leisure. The management of the Museum has always been notably liberal in supplying facilities to students. For some reason the new Director did not accede to my request. It is unfortunate, as the illustration of the object of most importance, No. 2, is not at all satisfactory.

would be seen that the form of this musical jar as a whole is exactly that of the common and well-known hieroglyph for stone = *tetl* = *te*. It also bears upon its rounded surface the parallel, curved or wavy lines that are characteristic of that hieroglyph anywhere and everywhere. The recognition of this form and marking came to me almost with a shock of surprise. This instrument is unquestionably correctly represented, and it has the form of the hieroglyph *te*. Was it made of stone? It is possible. Or is the form and marking merely one of those quaint fancies, a sort of play upon words, so common among the Aztecs, and suggesting the name of the instrument *tecomapilola*, by a sort of acrology? At all events, whether I am right or wrong in my suggestion that it is the *tecomapilola*, we have represented in Figure 2 an ancient Aztec musical instrument, in the form of a *tecomatl* (vessel), which was perhaps made of stone (—otherwise of pottery), and which was beaten with a round ball, probably of rubber or *hule*.



#### REMINISCENCES OF HON. P. J. VIEAU OF MUSKEGO, WAUKESHA COUNTY, WISCONSIN.

COLLECTED BY CHAS. A. KOUBECK.

Muskego, or "Mus-kee-guac," the fishing place, was one of the principal camping places, next to Mukwonago and Waukesha, of the Pottowottamie Indians, and a very large village of them was found about the shores of Muskego Lake by the early settlers. The abundance of wild rice, water fowl, fish and muskrats, which was probably not equalled by any other locality in Waukesha county, made the town of Muskego an exceedingly desirable place for the aborigines, who depended almost entirely upon wild game for food. These Indians were removed, with the Chief Onan-tis-sah, from Milwaukee and vicinity, in June, 1838, and established permanently at the previously mentioned town, the main village being at section 9, township 5, range 20, the center of the township of Muskego, on the site where Mr. J. C. Schutt resides.

This village was ruled by Chief Kaw-wis-sot, son of King Onan-tis-sah, chief of Milwaukee and head of the Indian council. Chief Kaw-wis-sot was a fine, strong-built man, and a strict and austere Indian and a terror among the tribe, and no one under him dare commit any wrong, for they would be severely punished, and many times suffer the death penalty. The wigwams made by these Indians were of basswood and black ash bark, which made strong and substantial abodes. The village proper, consisted of about ninety to one hundred wigwams, which were built in regular rows, about ten to twelve feet apart, similarly to regular streets, and were kept clean and neat by the order of the chief. The wigwams had a long open straight space on the roof to let the smoke escape; fires



were built in the middle of the wigwam, in direct line of the hole; on each side of the fireplace was a bench of split bass-wood for resting and sleeping.

This tribe of the Potowottamies was very clean and proud, and, as a rule, were not superstitious, and spent most of their time racing with ponies and played "la cross." There were about six hundred, including children, in this tribe. Camp fires were never used, except on some important occasions, as, war or medicine dances, and were kept about thirty or forty rods from the village and considered sacred.

The flint-work shops were kept on the outside of the village proper, on account of danger and accidents, which occurred when cutting and breaking the flints. Many fine expert workers lost their sight by flying particles of flint-stone, as it was being cut and chipped, and no admittance was allowed, except on the permission of the chief.

Since the settlement of this village no mound burials were employed, but the same mode of burial took place as that employed by the whites, only in the case of death by contagious diseases a gravelly place was selected, away from the burying ground, and all the implements and the body were laid to rest and dirt heaped on them. Caches and holes were made, where corn, potatoes, wild rice, dried venison, arrows, pipes, and tomahawks were stored away; these being selected on the side of a hill, close to the camp.

About one mile south of this principal village was found the Big Muskego Lake, the north bank of which was called "Latanders Point," where a burying ground is located, of which the Indians of late generations had no distinct traditions; it was held sacred. It was surveyed by I. A. Lapham, but it has been nearly all surveyed in recent years.

The tenacity with which these Indians clung to their hunting grounds in Muskego shows the estimate they placed upon its lakes and its marshes, and the forests, the great source which furnished them game and fish for food and skins for clothing and traffic. For years after their removal in the year 1836 to Council Bluffs, Iowa, quite a large number of them would return annually and spend a few weeks unmolested upon their favorite grounds, but were convinced that their hunting grounds would eventually be converted into fields of grain and grass; that civilization was fast approaching on its move westward, and that they must seek a new home beyond the Mississippi.

## CAVE MEN OF THE OZARKS.

BY E. H. JACOBS.

[Extract from the Benton County Sun.]

The central Ozark country, embraced within the limits of northwestern Arkansas, southwestern Missouri, and possibly the extreme eastern part of the Indian Territory, has, until now, never received the attention of scientific archæologists; and, yet, it is one of the most interesting and prolific sections of the United States in this particular. Everywhere over its area the usual surface finds of flint and other stone implements are made in immense quantities, and prehistoric village and camp sites are almost as common as modern farm houses. There seems to have been two kinds of ancient occupation, however, one represented by the surface finds, and the other by those dug up in the rock shelters. Beneath nearly every overhanging rock cliff, and in almost every small cavern or shelter in the faces of the bluffs along the streams of this region, wherever they are sufficiently dry, may be found evidence of prehistoric inhabitants in the form of ash beds, bones of animals now driven out of the country, bone, flint and stone tools, textile fabrics, and an occasional human burial.

These rock shelter remains, both in themselves and in their surroundings are typical to this region, and are not typical to any other part of the United States, so far as known. That is, no others like them have ever been found in America before the present discovery. They are widely different from the Cliff-Dwellers' remains of the West, and have nothing in common with the few isolated cave burials in Kentucky and Pennsylvania. They nearly approach in general character, the abodes of the ancient cave men of Europe, which were presumably the earliest human inhabitants of that part of the world.

The investigation of these Ozark rock shelters and their contents was the object of the expedition sent out by Phillips Academy. During 1902, the writer spent several months in McDonald county, Missouri, and since then has been located in Bentonville. Shortly after going into McDonald county, more or less talk was heard concerning human bones that had been dug up a year or so previous in a so-called cave in the bluffs of Little Sugar Creek, on the Scroggs farm, three miles above Pineville. Little attention was paid to the matter at first, but soon afterwards Mr. Scroggs, the man who dug up the skeletons, was met, and he confirmed the reports, and added that several fabrics, woven of what seemed to be bark and vegetable fiber, were exhumed at the same time. The shelter or cavern is located on the northeast side of the valley of

Little Sugar creek, in the face of a limestone bluff, about forty feet above the level of the valley floor. The cliff above the shelter rises perpendicularly for fifteen or twenty feet, then slopes backward and upward at an angle of perhaps forty-five degrees to a height of over one hundred feet, forming a high hill. The steep slope of the talus beneath the cavern ends at the edge of an ancient channel of the creek. The present course of the stream is probably forty rods distant. The general trend of the valley is from the southeast to the northwest. The region immediately around the shelter is covered with a thick growth of timber and tangled underbrush and vines, and is, therefore, difficult of access.

The shelter opens to the southwest, and has a width at its entrance of about twenty-one meters, narrowing to the rear until at the back wall it is only ten or twelve meters wide. The average depth from front to rear is about fourteen meters. The height of the roof above the surface of the ashes ranged from two to three meters in front and about one meter at the rear. The roof is horizontal. These measurements all apply to the shelter before the ash bed was disturbed. As the digging progressed it was learned that the ashes covered the entire floor of the cavern, and were from one to two meters deep, resting upon large boulders and slabs of limestone that fell from the roof in times past, nearly covering the entire floor.

At the back of the shelter, parallel to and extending upward from the rear wall into the heart of the hill from one to four meters, is a cave like crevice or crack whose sides are covered with an irregular mass of stalactites. At intervals beneath this crevice large stalagmites formed in and upon the ashes, in several instances spreading out in the form of "stools," upon the surface of the ash bed since the latter was deposited. These stalagmites, while forming, inclosed within their mass, large quantities of ashes, some charcoal, many broken animal bones and flint chips, thus producing a material similar to, if not identical with, the famous breccia from the prehistoric caves of Europe. It is the first time that true cave breccia has ever been found in the New World, and its discovery lends color to a growing belief that the earliest American lived in the Ozarks. Stalactite material forms very slowly, and to find the undoubted remains of human occupation embedded solidly in huge stalagmites and stalactites is an evidence of immense age.

The cave-like crevice described above extends on into the wall of the shelter, at its inner left hand corner, for a distance of about five meters, forming a small dark cavern or recess, in which the same mixture of stalagmite and bones was found. The lower part of this recess was filled over a meter deep with a wonderful deposit of animal bones and decayed bone dirt, with an occasional stone or bone implement, but no ashes to amount to anything. It seemed as if the ancient inhabitants



of the place had used this small cavern as a receptacle to toss refuse material in, thus keeping it filled up to the same level as the ashes in the larger cavern.

No similar discovery of bones and other remains covered by stalactites has been reported in this country, except in the Luray cavern, Virginia, where some bones were found covered by a stalactite. In that case only one evidence of human occupancy was found, while in Jacob's cavern hundreds of bones, flint chips and bits of charcoal were found in the limestone, from the surface down to as deep as four feet.

An official report on the expedition and its results will be published by the department of archæology, Phillips Academy, next fall. It will embody the observations of geologists on the growth of stalactites and stalagmites.

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### EXPLORATION IN PALESTINE.

BY REV. JOHN P. PETERS.

[Extracts from "Notes of a Vacation" published in the Journal of Biblical Literature.]

What has been done in the way of excavation seems to show that we shall never find in Palestine such an abundance of interesting and valuable remains as in Egypt or Babylonia; but, on the other hand, to conclude from these excavations that there are no important antiquities to be discovered is, to say the least, premature. What is needed is, first of all, more thorough excavation. All experience shows that the most valuable antiquities may remain undiscovered in such partial examinations: witness, for instance, the history of the excavations at Pergamus, at Abydos, at Ephesus, and I might even add at Nippur, which Layard reported as unpromising.

I am glad to be able to report that this fact seems now to be recognized by the Palestine Exploration Fund at Gezer, and it is proposed to excavate this entire site from beginning to end, and not to be deterred by any apparent lack of success from completing a thorough exploration in Palestine.

Four cities are so far identified with certainty by Mr. Macalister, and, adding his work at the megalithic temple, he identifies seven periods covering about three thousand years, ending with the commencement of our era. Underneath the walls of the earliest city lie the usual rock-cuttings, which seem in their origin to have been human habitations and to have belonged to prehistoric settlers. One discovery in these caves is of very great interest; that is, the practice of incineration by a non-Semitic people antedating the Semites. The latter, the Semites, still in prehistoric times used the same cave for purposes of burial, but a considerable period had intervened between the two. The most important and most interesting discovery yet reported is the great megalithic monument

and the evidences in connection with it of phallic worship, and also, apparently, of the sacrifice of infants.

Ta'anuk is one of the most promising sites for excavation in Palestine, and to-day, after Sellin's excavations, it is, if possible, more promising than before. This *tel* is prominent and well defined, so that it was easy at the outset to see what space was to be covered. There are, besides the main mass of débris on the top, two or three terrace-like steps of débris lower down. These latter have not been touched, except in one case on the north side, where a trench was run the breadth of the lowest terrace. This struck a stone tower or platform



MEGALITHIC MONUMENT AT GEZER.

resting on the solid rock. It was built of large stones, especially at the foundations, laid in mud as mortar. What this was, it is impossible to say, as the excavation was never completed. On the highest level broad trenches were run at the north, east, and west. The trench on the north struck nothing but rude walls of houses at various depths. In the trench on the east was found a building partly of stone, partly of bricks, mostly of enormous size and very poorly baked. Farther up this trench toward the center of the *tel* was found what seems to have been a rock-cut altar, and near this altar numerous burials of infants in jars. From a comparison of similar burials near the great megalithic temple, unearthed by Macalister at Gezer last summer, it would seem that we have here evi-



dences of infant sacrifice. In the west trench at a considerable depth were found the foundations of a massive building of fair size. The masonry of this building was like that of the tower of the north slope of the hill. The stones were drafted sometimes on one side, sometimes on two, sometimes on three, sometimes not at all, but never on all four sides. The same peculiarity is observed in the old walls at Gezer, and to some extent in Eshmun's temple at Sidon. Objects found in and by this building prove its very early date, as does also the depth at which it was found. The walls of the city were not discovered at any point, unless possibly on the north side, and indeed no proper effort seems to have been made to find them, or to find the main gate of the city, which would be, I fancy, on the east or southeast side of the *tel*. None of the trenches were systematically carried to virgin soil or bed rock, and the buildings found were not properly followed up nor explored.

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### FOLK-LORE OF MT. LEBANON.

BY MRS. GHOM EL-HOWIE.

SHWEIR, MT. LEBANON, SYRIA.

I have just returned from a ten days' pedestrian tour among some of the villages and hamlets of Mt. Lebanon.

The primitive habits and life of the people in Syria are being influenced in a perceptible degree by the leaven of Western ideas, acquired through contact with the United States, Brazil, and other countries, by the numerous emigrants who leave their mountain homes, and after a longer or shorter sojourn in the West, return, bringing with them notions foreign to their original habits of life. We frequently meet with such people. Their interests and conversation are directed to the countries beyond the Atlantic, and we have to listen to many tales of profit and loss before we can introduce in a mixed gathering the subjects that we are interested in, namely, the antiquities and folklore, etc., of this country.

The former information could only be acquired by particular and repeated inquiries about "written-stone," "pictures," "tombs," etc., in the neighborhoods they were passing through. The latter came out of the former, as a natural consequence. For instance, in Setima we (my husband and I) noticed that a church (St. John the Baptist) was built on the confines of the village, almost in the wilderness, while the village itself was built on the mountain slope, entirely above it. We inquired the reason, and were told that the church was built many centuries ago, on a spot where an ancient shrine had stood. This shrine had arisen beside a miraculous bush, in which lights were observed every night. The builders of this church edifice



wished to place their church on an elevated spot in their village, but in the night the stones always moved back to where the "bush" had been, and the attempt to build elsewhere was finally abandoned.

In Mejdal Tarshish we came upon a woman from the village of Temnin-el-Tahta (Temnin-the-lower), and she told us that a native of that place—a young woman—was once washing close to Mararat-el-Habbash (the cave of the Ethiopian) and since she was "lucky" (that is, able to control the rassad or spirit, who guards hidden treasure) the cave opened of its own accord, and the woman perceived unbounded treasures within. She entered and took out a quantity of gold, and, returning, loaded herself a second time with like success, but on returning for a third load the rock closed and the woman was seen no more. Her cries were heard from within, but efforts to rescue her were unavailing.

We heard a somewhat curious version of the "David and Bathsheba" incident, from an old Maronite, over seventy years of age; he said: "Bathsheba was the wife of Hourica-el-Bistani (Uriah, the gardener). She was bathing in the garden when David saw her and went to her. After the king had gone, the husband returned from the battle, but on approaching his house he saw one of the decorations of David's head-gear sticking on to the entrance. He then feared to enter, for he supposed that David was still in the house; so he went to the palace, and to his great surprise saw the king there.

"David asked him: 'Why didst thou not enter thine house?' Hourica replied that having seen the 'button' of his majesty's hood on the gate and supposing that he was still there, kept away.

"David then arranged for the destruction of Hourica, which was accomplished. After that David's heart smote him, and he sent for his wise son Solomon and said to him: 'A rich man had ninety-nine ewes, and yet he killed one of his neighbors to possess himself of the one ewe which he had.'

"Solomon judged that the transgressor should be built into a wall. Accordingly David gave orders, and he himself was placed horizontally in a layer as part of the building material, and the builders proceeded to lay courses of stone upon the top of him; whereupon David gave utterance to the 50th (51st) Psalm, and he was saved by the miraculous shifting of the under layers alternately to the top. When the layer into which he was built reached the top, the builders placed another course upon him, whereupon he gave utterance to another Psalm, and straightway he was found above the stones. Seventy courses were laid upon him, but he rose to the top of them all. His body was not hurt, but he lost his sight and he kept rubbing his eyes with a rag.

"Then he called his son Solomon and said to him: 'Thou makest beasts and stones to speak; thou knowest the mysteries

of nature; thou treatest others, treat me, I pray thee; restore me my sight.'

"Forwith, Solomon sent for Satan and asked him: 'What shall I do to my father, to heal his eyes?'

"Satan said: 'But for his rubbing them, they would have healed long before yesterday. They need ointment, they need lime.'

"'Get away, you wicked liar,' said Solomon, 'what you said first is right, if the rubbing were to stop, the eyes would get well; ointment and lime would make him blind altogether.' David stopped rubbing his eyes and he regained his sight."

I do not know whether these stories are Folk-lore properly so called, but if they may be legitimately classed under that heading, there is abundance of like material to be had. It can only be collected, however, by one who is a resident of the country and acquainted with the language.

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## EDITORIAL.

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### THE MIGRATION OF SYMBOLS.

The distinguished archæologist Goblet de Alviella has written a book on the migration of symbols, but has merely hinted at the thought that the same symbols are found upon this continent and upon the continent of Asia. The following facts, therefore, will be of interest in this connection:

I. It is plain that certain symbols, such as the cross, the circle, the serpent and tree, and the suastika are as widespread here as they are in the far East.

II. The resemblances between them are too close to admit of a parallel development. This resemblance is seen, not only in the symbols mentioned, but also in the winged figures which are so numerous here. These are seen over the doorways and temples, and have the appearance of the winged globe, resembling those over the temples of Egypt, and those which were used in Assyria, as emblems of royal power. The symbol is attended with the bow and arrow, and the feathers are in the reverse direction, but these are probably owing to the adaptation to the American aboriginal idea.

III. The differentiation of the symbols is to be noticed. In America there are no priests standing before the Asherah or sacred tree, no knights riding upon horses and contending with dragons; yet the presence of the serpent upon the calendar stones and the tree in the codices remind us of the myths of the East, and may have sprung from the same source.

GREAT SERPENT EFFIGY, IN OHIO.







GREAT SERPENT CLIFF NEAR BRUSH CREEK.

IV. The comparison of symbols which were common among the mounds with those which are common in Asiatic countries will be of interest to those who have extended their studies far enough to appreciate the subject. It has been a disputed point for many years, whether there was any contact between this country and the Asiatic continent, and some have been so positive, as to be ready to cut off debate. The time has come for a thorough consideration of the subject.

Candor obliges us to acknowledge that many things may be said upon both sides, for while there are many symbols which resemble those common in the East; yet they are so mingled in this country with imitative forms, which must have been purely aboriginal in their origin, that it is difficult to identify them.

Still, there are certain other symbols, which have been recognized as common on both continents, and these we may take as evidence on the subject of contact.

We take first the symbol of the hand. This is acknowledged to be almost universal in its distribution, for it is found in India.



*Hand on Mound-Builders' Pottery.*

in Australla, and in all parts of America, and is always a very impressive figure wherever seen, as it reminds us of the red hand, which is so common in the Old

World. The hand upon the rock, is, perhaps, too common to have any particular significance; but where the hand is placed inside of a circle, especially inside of one formed by a knotted serpent, the symbol becomes very suggestive. One such figure is shown in the cut. This is especially significant, as it contains the symbol of the eye marked upon the palm. Doubts have been thrown upon its genuineness, yet the evidence is in its favor.

Mr. W. H. Holmes says of it: "I have seen in the National Museum a stone disk, on which is a well engraved design, which represented two entwined or knotted rattlesnakes. Within the circle, or space, is a well-drawn hand, in the palm of which is placed an open eye. There is not sufficient assurance of its genuineness, to allow it undisputed claim. It is said to have been obtained from a mound near Carthage, Alabama." General Thruston, however, says that the similarity of the open hand to those upon the vessels of pottery from Ten-



*Hand in Central America.*

nessee and Alabama seems to confirm its genuineness. Two vessels of pottery decorated with the figure of an open hand have been discovered since the publication of Mr. Holmes' article.

It is well known that the open hand is a common symbol on the monuments of Central America, and they are often asso-



*Hand and Serpent on Shell Gorget.*

ciated with the serpent and human figures. The cuts illustrate the point and make it plain that there was a peculiar, and yet mysterious significance to the symbol; and this of itself may account for its world-wide distribution. The suastika is also a symbol which is world-wide in its distribution. This is generally regarded as an equivalent to the fire generator, but the symbol has many variations and many meanings. It varies from the gramadion, which was com-

mon in Cyprus and Athens, and has the same significance as the four-rayed wheels in India, and the crux ansata of the Phœnicians. It always implies revolution, and, as found among the mounds, is supposed to symbolize the revolution of the sky. It may be called a solar cross.

It is interesting to verify the fact that the same combination of circles, squares, solar crosses and suastikas are found with variations among the mounds, that are common in Asia, as well as Europe. There may have been a spontaneous agency of the same factors in this symbol, and the same natural phenomena may have been symbolized by it; yet the distribution of the symbol is so extensive, and the significance is so similar, that one is inclined to ascribe it to an extraneous origin.

The owl face is also another symbol, which is almost world-wide in its distribution. The winged globe is seen in two particular localities in Central America, and has become familiar to archæologists from Mr. J. L. Stephen's description. It is uncertain whether any such symbol is to be found among the mounds, yet Mr. Clarence Moore has described a vessel found in Georgia, near Hare Hammock, which contained a peculiar decoration resembling the winged globe or winged circle, the wings having a peculiarly natural appearance. He has, however, described a vessel found in the Walker Mound in Georgia, which had upon the outside a number of circles, with plumage surrounding them, which convey the idea that they were imitations of feathers of birds and were purely indigenous in their origin.





CROSSES, CIRCLES AND SUASTIKAS.



VARIOUS SYMBOLS IN SHELL.



The serpent and tree is another symbol, which has been found among the mounds. This is one of the oldest and most widely-diffused emblems in the East. Sometimes it is found as a column, crowned by a palmette, with branches extending to either side, with a vine stretching from the end of the



*Tree and Face.*

branches to the bottom. Sometimes it is a fire drill, and the serpent is a rope which turns it. Again, it is a tree from which the first pair are plucking fruit. In Central America the symbol varies in form. It sometimes has a bar across the branches, making a cross; sometimes it is represented with branches shooting out on either side, blossoms at the end of the branches, with grotesque human figures clinging to the trunk; sometimes the cornstalk is substituted for the tree, and human faces are seen as at Palenque; but the idea is the same wherever the symbol is seen. There are two tablets, which come from the mounds; one of them, called the Gest Stone, once owned by Mr. Gest of Cincinnati. In this, the symbol of the tree is combined with the serpent; a serpent in one view being very plain; but in another view, the human face, the arms bent inward toward the body, being in the shape of branches, and the legs turned upward, also as branches; the roots of the tree apparently served as support. The detail, which is characteristic of the sacred tree in most distant countries, is the appearance of serpents, which twine themselves around the trunk or stem. The only relic which contains any resemblance to this, is the pipe, which is carved in the shape of a human face, with branches of a tree wound around the face; the tree itself resembling the serpent, recalling the story of Man-bozho and the serpent.

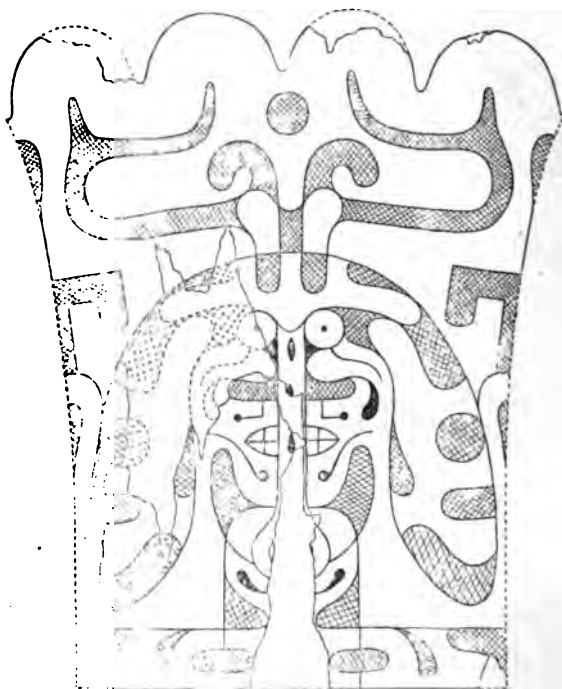
The winged human figure is also a common symbol in America, as well as in the East. Everyone knows that winged human images are common in Babylonia, and are suggestive of the prehistoric period; but there are winged figures among the mounds which are as interesting as even these. These remind us of the Priesthood of the Bow common among the Pueblos, and described by Mr. F. H. Cushing, though he calls the figures found on the copper plates "Eagle Men," or "Man Eagles," and gives to them a mythological significance. The cut below represents a winged figure found in the Hope-well Mound.

There were engraved on this single bone, the head of the serpent, with the circles and cross inside of the head, making a cosmic symbol; also a human image, with feet turned out, after the manner of Central American sculpture, the head crowned with deer's horns; while from the shoulders extend the wings of a bird, the eyes being made of dotted circles, and



the human face hidden beneath the cross hatching, which symbolized the serpent's skin.

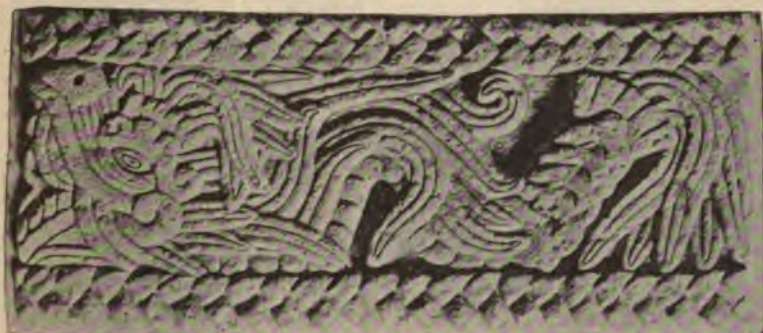
The coiled serpent is another symbol which is common among the mounds. This is significant of the motion of the sky, and resembles the suastika in that respect. There is no symbol which is more frequently seen, or more significant. The serpent is divided into four parts by rings, the head is always within the coil, and the tail on the outside. It is the same symbol as that which can be seen on the calendar stones in Mexico, the chief difference between them being that the



*Winged Figure.*

serpent on the calendar was divided into thirteen parts and has a human face issuing from the mouth; while in the shell gorgets, the head of the serpent has the shape of concentric circles. There are codices in Central America in which four serpents are represented with heads joining together; four serpents forming a square, with a human face in the middle. The spines of the serpents numbering thirteen multiplied by the four serpents, making fifty two, exactly as four joints of the serpent multiplied by the thirteen circles which are seen upon some of the gorgets make fifty-two years in the Mexican cycle.

The bird is sometimes used alone as a symbol of rain. In such cases it has its wings spread and its plumes drooping.



SERPENT SYMBOLS.



INSCRIBED SHELLS FROM THE STONE GRAVES.



suggesting the idea of a cloud hovering over the earth and dropping rain upon the soil. There is an earthwork in Ohio, which represents the bird with drooping wings. It is contained within a square enclosure and situated upon the summit of a hill. Every opening to the enclosure is guarded by a mound, showing that it was a sacred place. It may be that the same tribe erected this effigy that inscribed the rain bird on the rocks, namely the Dakotas. The thunder bird, as seen on the rocks, is shown by the cut, the lightning serpent being caused by the flash of the bird's eye. The lightning god is also seen in the cut. This is a humanized tree, as well as a lightning serpent.

The looped square with the birds' heads is another symbol. This seems to signify the four quarters of the sky, which was a common conception among the aborigines. The birds' heads are always turned in one direction, and seem to symbolize the revolving motion of the sky and is generally associated with



*Humanized Lightning.*

*Thunder Bird.*

the serpent gorgets, the serpent symbolizing the water, as the bird does the air. See plate.

The suastika is a symbol, which is also common in the mounds, may be regarded as a cosmic symbol; but it has the additional factor suggesting the idea that it symbolized motion. Some of the gorgets have the crescents without the circles, showing that the rotary motion was more important than the circles which symbolized the heavenly bodies. The suastika was also used to symbolize the same thing. The gorgets, which have birds' heads projecting from a looped square, have been found in Mississippi, Louisiana, and other localities.

It also suggests the revolution of the sky as well as the four quarters of the earth, and so may be regarded as a cosmic symbol—the bird symbolizing the sky, but the looped square the earth, as on the humanized figures the horns symbolized the wild animals of the forest; the wings symbolized the creatures of the air, and the human form symbolized the position of man among all other creatures.

The cosmic symbol, has also been recognized in the copper plates found in the Hopewell Mounds. It resembles the cosmic symbol found at Copan and in various parts of Mexico. But it is here combined with the serpent symbol, and is contained in a copper plate, which has the shape of a serpent's head. On this plate there are four circles, and a cross connecting the circles, with a circle in the center. The significance of this symbol, is that the four points of the compass and the four quarters of the sky are brought together into one.

Prof. Putnam has described this cosmic symbol in a pamphlet upon the symbolism found in the Hopewell Mound. The bear, the serpent, the human face, the horns of the elk, wings of



*Cosmic Symbol and Serpent Head.*

the bird, the claws of the bear, the serpent's head, all are strangely mingled together in the engraving which was mingled with cross-hatching on a human femur. The great serpent encircled the whole, very much as the serpent encircles the earth in the Norse mythology.\*

The phallic symbol was used by the Mound-Builders, and signified life and the creative power. It is sometimes seen issuing from the mouth. The tablet found near the Cahokia Mound illustrates this.

\* A study of the cuts will show how the Mound-Builders combined birds' wings, animal horns and serpent bodies with human figures, both in their effigies and their relics, and often made them symbolic of the lightning, the rain, and the operations of nature, using even the spider and the butterfly for the same purpose.





BIRD TABLET FROM OHIO MOUNDS.

This tablet has the same contour as certain earthworks, both of which show the taste of the Mound-Builders.





*Cahokia<sup>a</sup> Tablet—Reverse.*



*The Phallic Symbol on the Cahokia Tablet.*

V. The inference which we draw from the study of the symbolism used by the Mound-Builders, is that there was a general system which was common throughout the continent of North America, and was shared by the Mound-Building tribes, but adapted to their circumstances and their preconceived ideas. This symbolism did not supplant the religious systems which prevailed, but was absorbed by them and conformed to them, and made to express the religious thoughts which the people had received from their ancestors. We maintain that there was a great variety of religious systems among the Mound-Builders. Animal worship, or totemism, prevailed among the hunter tribes of the North; sun worship prevailed among the agricultural tribes situated along the Ohio River; a modified and complicated system of nature worship prevailed among tribes which dwelt in the villages of Missouri or Kansas and Tennessee; a modified system of idolatry, combined with ancestor worship, prevailed in the Gulf States. Each system required different symbols, by means of which it could make itself known.

Our supposition is, however, that much of this symbolism was borrowed from the civilized tribes of the Southwest, and adapted to the systems which prevailed among the Mound-Builders, and was made to express their religious thoughts and their inherited mythology, without radically changing the religious system which prevailed. This may seem like a mere conjecture, yet the great similarity of the symbols found among the mounds of the Mississippi Valley and the ruined cities of the Southwest, proves the position. This similarity has been recognized by different authors, among whom we might mention Mr. W. H. Holmes, Gen. Gates P. Thruston, and others. Mr. F. H. Cushing has spoken of the similarity of the symbols of the Zunis and the Moquis and those on the copper plates found in the stone graves and near the Etowah Mound. Mr. Holmes takes the carved shells and engraved disks and gorgets, and describes the designs upon them, and compares them with the pictographic manuscripts of Mexico, arranging them in groups in the following order: the circle, the cross, the looped square, the bird, the spider, the serpent, the human face, and the winged figures, and analyzing the parts and showing the resemblance between them.

In reference to the cross, he says: "The design is symbolic, undoubtedly used as a symbol by the prehistoric nations of the South, and was probably known in the North. They all belonged to the American type. It is frequently associated with sun worship and has reference to the points of the compass." Mr. Holmes also says:

It is well known that the barbarous tribes of Mexico and South America had well-developed systems of sun worship, and that they employed symbols, which retained a likeness to the original. The form of the circles, or suns, carved upon the concave surfaces of the shells, is similar to that of the paintings on the high rocky cliffs.

No developed calendar is known among the wild tribes of North America. The highest achievements known of in this line, consisting of simple pictographic symbols of the year, but there is no reason why the Mound-Builders should not have achieved a pretty accurate division of time, resembling in its main features the systems of their Southern neighbors.

The ancient Mexican pictographic methods abound in representations of trees, conventionalized in such a manner as to resemble crosses. By comparison of these curious trees with the remarkable cross in the Palenque tablet, I have been led to believe that they must have a common significance and origin. The branches of these cross-shaped trees terminate in clusters of symbolic fruit, and the arms of them are loaded down with symbols. The most remarkable feature is that the crosses perform like functions, in giving support to a symbolic bird, which is perched upon the summit. The analogies go still further, the bases of the cross in the tablet and in the paintings are made to rest upon a highly conventionalized figure of some mythical creature. A consideration of these facts seems to lead to the conclusion that the myths represented are identical, and the cross and the cross-like trees have a common origin; whether the origin is in the tree, or in a cross, otherwise evolved, is uncertain.

With all people the bird has been a most important symbol. It came naturally to be associated with the phenomena of the sky, the wind, the storm, the lightning, and the thunder. In the imagination of the red man it became the actual ruler of the elements and the guardian of the four quarters of the heavens. The storm bird of the Dakotas dwells in the upper air. When it flaps its wings, we hear the thunder; when it shakes out its plumage, the rain descends.

The significance of the looped figure, which forms a prominent feature, has not been determined, but it would be well to point out the fact that a similar looped rectangle occurs several times in the ancient Mexican manuscripts.

Among the insects, the spider is best calculated to attract the attention of the savage. It is in many respects a very extraordinary creature, and is endowed with powers, which naturally place it along with the rattlesnake and other creatures possessing supernatural attributes. With the great Shoshone family, the spider was the first weaver.

An examination of the plates will show that the serpent and tree, the circle and cross, and the human figures were represented by effigies, as well as by relics. It will also reveal the fact that human sacrifices and contests between warriors are depicted by the relics found in the mounds, as well as by the codices from Mexico.

Now, the question which we ask in connection with these resemblances, is whether they do not prove a transmission of symbols; but if a transmission from one part of the continent to another, why not from the Eastern to the Western. It is acknowledged now that the symbols which have been found in the buried cities of Knossos, Crete and Mycenæ were received from Southern Asia, but the very same symbols are also found on the American continent, and what is more they have the same combinations and seem to have the same underlying thought.

There are, to be sure, certain serpent effigies here, which are not found elsewhere, but if we look at the circles and squares, the serpents and trees, birds' wings on human bodies, cosmic symbols and whirling crosses, priestly robes and warrior attitudes, and phallic symbols in human mouths, we shall find the parallel most surprising. It will be noted that the serpent





ENTERING THE WISCONSIN RIVER AT PORTAGE.

(Bronze relief, Marquette Building, Chicago, by Herman A. MacNeill.)

"Thus we left the Waters flowing to Quebec . . . to float on Those that would thenceforward Take us  
through strange lands."—Marquette's Journal, 1673.



THE MEETING WITH THE ILLINOIS.

(Bronze relief, Marquette Building, Chicago, by Herman A. MacNeil.)

"They replied that they were Illinois; and, as a token of peace, they offered us their pipes to smoke."  
—Marquette's Journal, 1673.

is generally coiled so as to resemble the whirling crosses, and probably was intended to represent the rotatory motion of the sky; and yet it is supposed to have been a symbol of water, as the bird was of the air. Each one of the elements being symbolized by a different figure.

## ARCHÆOLOGICAL NOTES.

**MOHEGAN TRADITIONS.**—When the Pequots emigrated from the upper Hudson River to the Connecticut, and avoided Long Island Sound, they found a race of little men, who soon died out. These may have been possibly the Esquimaux. They lived and died in pre Indian days.

**THE COLLECTION** of Mr. Joseph H. Edinger has been placed in the rooms of the Michigan Historical Society, at Lansing, Michigan. It contains six thousand individual pieces, composed of arrow-heads, spear-heads, hoes, drills, fleshers or skinning instruments, tomahawks, axes, war clubs, hammers, chisels, gouges, mortars, pestles, etc.

**ROCK CUT ROADS.**—A paper read before the British Archæological Association, March 4th, by Dr. Phene, makes mention of a series of round rocky projections from the tableland in Asia Minor, which spread out into successive terraces upon which roads were cut, with stairs connecting the terraces. At Cornith similar terraces on an enormous scale have been recognized.

**PREHISTORIC COPPER INSTRUMENTS.**—A discussion was carried on at a meeting of the American Association at Washington, by several archæologists, among them Mr. Clarence Moore, Mr. Warren K. Moorehead, Mr. McGuire and Mr. Willoughby. The conclusion was reached that many of the copper instruments which were supposed to have been post Columbian were really prehistoric. This will have great effect upon the copper relics which have been found.

**HIEROGLYPHICS IN EGYPT.**—A rock inscription discovered in Egypt by Mr. Greene throws light on the origin of hieroglyphics. It represents a boat, similar to those which were used in prehistoric times. In the bow are two carved lines that represent the awning; other lines that represent the mast and the oars. Above it is a cartouche on which stands two hawks crowned with a crown. In front of the boat is another cartouche. These are signs of the prehistoric period, and may, perhaps, be regarded as the earliest form of picture-writing.—*The Society of Biblical Archaeology.*

**A REMARKABLE** find of relics has been made in a mound near Stuttgart, Arkansas. It consists of a couple of carved pipes, which bear the semblance of a male and female; the male in a kneeling posture, and the female seated. Along with them was a large circular plate made of polished stone, nearly flat. In the center was a phallic symbol representing the Yoni conventionalized. The border of the plate represents thirty-six semicircular figures, opening toward the symbol in the center. The relics are now owned by Mr. Stoddard of Stuttgart, who thinks he finds in them Chinese symbols and figures which have a strange significance.

**MR. A. M. BENHAM**, of Phoenix, Arizona, is visiting his son, Mr. J. W. Benham, of the Hyde Exploring Expedition of New York. Mr. Benham has been collecting and compiling data on the pre-historic cities, canals and peoples of the Salt River Valley, Arizona, for the first "Bulletin of the Phoenix Museum." Mr. Benham has in his possession valuable charts, maps and notes on this interesting subject, establishing a complete chain of the ancient irrigation systems of the Salt River Valley. The forthcoming issue will be the Museum's first "Bulletin," but the importance of the subject in hand will place the publication in the first rank of Museum Memoirs.



## LITERARY NOTES.

*The Papoose* for June, 1903, describes a "Society of False Faces," written by Mr. David Boyle. A member of the society must go about among the people in the spring and fall, and must visit sick people at all times when called upon.

*The Folk-Lore*, Vol. XIII., No. 4; 1902. Translations of the Folk-Lore Society, London: David Nutt, 57-59 Long Acre. The leading article in this number is by Andrew Lang, on the origin of totem names and beliefs. He says: "Totem names are the titles of names of groups of kindred, real or imagined. They are derived from animals, plants and other natural objects. They appear among exogamous tribes. None may marry one of the same totem name. Each man, each organized magical society, looks out for some dream, and adopts some special animal friend that appears in the dream. The totem of each kin abstains from killing or eating its totems. The blood feud is taken up by all the members of the slain man's totem. The people know nothing about the beginnings of the institution, but the Klinkets hold that souls of ancestors are reborn in children; that a man will be reborn as a man, a wolf as a wolf, and a raven as a raven." Spencer and Gillen have recognized the system in Australia. Mr. Lang holds that the mystery of totemism arises in the first instance from group names.

*The Papoose*, published monthly by the Hyde Exploring Expedition Company, 26 W. 23rd St., New York. The March number of this journal contains a protest against the vandalism which is so rapidly destroying the monuments and relics of the far West. Wholesale havoc has been made with the Cliff-Dwellers' relics. Seven tons of valuable relics were taken away for exhibition at the World's Fair at Chicago. Montezuma's castle has been nearly destroyed. During the past year seven men have been at work at the Los Muertos. The probability is that the Fair at St. Louis will be supplied with material from the same sources. There ought to be a law enacted which would make it a crime to destroy the works which have been discovered, and which are the most interesting monuments in our country.

THERE is in the British Museum a slightly-damaged stone, which in the opinion of J. H. Breasted contains the oldest known formulation of a philosophical cosmogony. The inscription is as old as the eighth century B. C., perhaps older, which shows a very advanced stage of thought. The following is the translation and comments upon it:

"He is the maker of every work, of every handicraft, the doing of the hands, the going of the feet; the movement of every member is according to his command, (viz.) the expression (lit. 'word') of the heart's thought, that cometh forth from the tongue, and doeth the totality of everything." Here, it is clearly stated that everything first exists in the mind as thought, of which the heart is the seat; this thought becomes real and objective, by finding expression, and of this the tongue is the channel. "Heart" is thus, by metonymy, the concrete term for "mind"; while in the same way "tongue" is the concrete term for "word," or "command," the expression of the thought.

"(He is) the one who makes to (?)—that which comes forth from every body (thought), and from every mouth (speech) of all gods of all people, of all cattle, and all reptiles, which live, thinking and commanding everything that he wills."

Not satisfied with this development of the functions of Ptah, our Egyptian thinker must now elaborate the theological position of the god more fully still. We have already seen that Ptah is identified with Horus;

he is now identified with Thoth. He is Thoth, the wise, greater is his strength than that of the gods; he is united with Ptah, after he had made all things, every divine word; when he had formed the gods, had made the towns.

We have here, at an astonishingly early date, a philosophical conception of the world which is to some extent valid, even at the present day. It may summed up thus: Assuming matter, all things first exist ideally in the mind; speech, or its medium, the tongue, constitutes the channel, as it were, by which these ideas pass into the world of objective reality. In that world the thought impulses of all living creatures are to the same mind that created such creatures; hence all products of thought of such creatures are primarily due to the all-persuasive mind, and only secondarily to the living creatures concerned. Ptah, therefore, from the earliest times was known as the patron of the craftsmen to whom he furnished plans and designs. It was but a step farther to make him the author of all thoughts and plans, and from the architect of the craftsman's work, he became the architect of the world. The workshop of the mephitic temple, which produced statues, utensils, and offerings for the temple service, expands into a world, and Ptah, its lord, grows into the master-workman of the universal workshop.

"I bring this land to the place where the god is," For king and priest alike the world is only a great domain of the God, but for the priest of Ptah it is not only his domain but also his workshop. Continuing the above evidences of the Egyptian's attitude of mind toward the world, we see that even the temples symbolized this notion that the land was the god's domain, for the decorations represent the floor as the land, and the roof as the sky, thus putting his domain into his house. Similarly all the king's victories and the list of his conquered towns are engraved on the temple walls; they are all the god's. This view of things brings theological thinking into close and sensitive relationship with political conditions, for the domain of the god so conceived is limited by the military and political power of the king.

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## BOOK REVIEWS.

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**FATHER MARQUETTE.** By Reuben Gold Thwaites. Published by D. Appleton, New York: 1902. Price, \$1.00. Illustrated. 24 pages.

This is a beautiful book, and one that will interest every American citizen, as it throws light upon the early exploration of the great lakes and the discovery of the upper Mississippi, and brings before us a noble character.

It is written in an interesting style, and is beautifully illustrated by plates which represent the various scenes in the life of the explorer. These plates were taken from the bronze reliefs in the Marquette Building in Chicago, and represent various scenes in the life of Marquette, the missionary. Two of the plates are furnished with this review.

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**DANIEL BOONE.** By Reuben Gold Thwaites. Published by D. Appleton Co., New York: 1903.

Daniel Boone has the same position among the early pioneers that Marquette had among the early explorers, though the two differed in nearly all other respects.

Daniel Boone has always been very popular among the hunters, and is especially admired by the young men who are filled with the love of adventure. While Marquette is a hero to those who appreciate the quiet heroism which suffers in silence, and yet results in great accomplishments.

Mr. Thwaites, the author of the sketch, has been fortunate in having access to the vast amount of material which Dr. Lyman Draper had accu-



culated throughout a lifetime of laborious collection. The book shows this, for it is heavy with the weight of the material furnished, and lacks the tragic interest which the subject warrants and in reality demands.

A life of adventure, full of tragic interest, requires a style different from that of the historian.

Daniel Boone was born in a frontier community and in circumstances that lead naturally to a wild life. He was a good representative of that class of people who always keep just beyond the borders of civilization and are discontented when the country around them becomes settled. He was constantly on the move; starting from the valley of the Yadkin, settled first on the border of Kentucky, next on the Holsen River in the region of Boonesboro, and spent his old age west of the Mississippi River. Much of his time he was away from his home and a lone hunter in the forests. He never accumulated any property, and owes his reputation to the fact that his life was full of adventures. The Louisiana purchase occurred after he had removed to western Mississippi. The war of 1812 occurred in his old age, at a time when he was mourning the death of his wife, who was with him on all his pilgrimages and shared all his perils.

He was still uneasy and spent weeks together upon the banks of the Missouri, and became interested in Rocky Mountain exploration. His stature was that of a giant, his general appearance that of a wanderer. His successive failures to acquire a legal foothold to the land to which he had piloted others were pathetic. His sterling integrity; his courage and patience in enduring hardships are worthy of admiration.

**LEONARDO DA VINCI.** By Adolf Rosenberg. Translated by J. Lohse Lemcke & Baechner, New York.

This is a beautiful book and one that will interest all lovers of art, and especially those who are admirers of the old masters. Leonardo da Vinci was one of the best known of the painters of that age, which was so remarkable for the number of its artists, as he was contemporary with Michael Angelo and preceded Raphael. His greatest work was that of the "Last Supper," but his skill was also exercised upon the various Madonnas and holy families, copies of which are found in the various engravings which are found in the book. The style of the letter-press is somewhat obscure, and yet, with the engravings, it furnishes us with a clear idea of the peculiarities of a great artist's style, as there are many engravings which represent the studies which were used preparatory to these wonderful paintings. The engraving of the "Last Supper," is of itself a work of art. The book is one of a series of monographs on artists.

**ROUTE OF DE SOTO'S EXPEDITION FROM TALIEPACONA TO HUHAENE.**  
By Prof. T. H. Lewis.

The route of De Soto has been often described. The one by Mr. James Mooney has been published by the Ethnological Bureau. This one by Mr. T. H. Lewis is the result of much study. It contains a good many names whose spelling seems to be unfamiliar, and it seems difficult to identify the route with any localities which are familiar. It is accompanied with a Spanish map, taken from the work of Henry Harrisse. The notes are very full. This pamphlet is reprinted from the Pub. of the Miss. Hist. Society, Vol. VI.

**DESCRIPTION OF OHIO.** By Manasseh Culter.

**THE NORTHWEST TERRITORY AND WESTERN RESERVE.** By James A. Garfield.

**THE CAPTURE OF VINCENNES, 1779.** By George Rogers Clark.

These three pamphlets furnish a bird's-eye view of the Northwest territory, but is now properly the interior. They carry us back to those beginnings in which the foundations of society were laid, and remind us of the wonderful progress which has been made.



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## ARCHITECTURAL STYLES IN THE OLD AND THE NEW WORLD.

BY STEPHEN D. PEET.

We have spoken of the ruined cities of America, and have described those which were erected by the Aztec and the Toltec tribes and shown their characteristics; but have not yet fully described the architectural styles which were embodied in them.

We take up this for our present subject, but shall draw a comparison between the cities of America and those which have recently been discovered in the ancient lands of the East—in Babylonia, in Syria and Greece, and the islands of the sea.

I. We shall first speak of their geographical situation and their general characteristics. It is well known that the cities of America are confined to certain belts of latitude, which correspond in a certain degree to those in which the older cities of the East are to be found. There is a significance in this, for it proves that all the nations of the earth have had to struggle with the obstacles which nature planted in their way; but that those nations which were situated where the mere struggle for existence was so severe have remained in a barbaric or savage condition, while those that dwelt in the midst of rich plains, where climate and soil favored their progress, have always been the first to reach a high grade of civilization. In these localities we find that art and architecture made their most rapid growth.

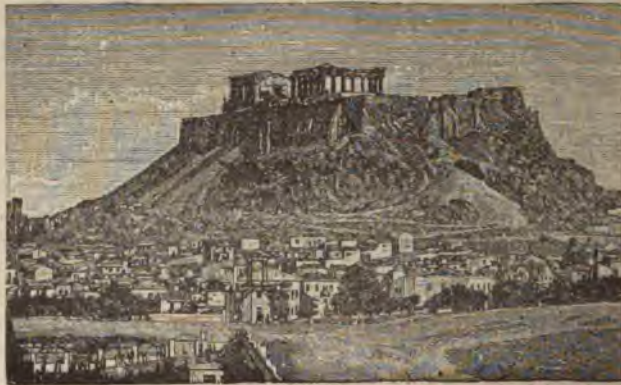
It will be understood that the cities of the Old World were situated in the midst of rich valleys, where the means of subsistence were easily gained, where a large population could be supported free from attack, and where diversity of employment could be followed without disturbance. Such was the case with the cities in Babylonia, in Egypt, in Syria, Epirus, and the regions about the Mediterranean Sea. The ruined cities of America are also found on those rich plains, where vegetation is abundant and where the means of subsistence are numerous. In fact some of the cities are surrounded by vegetation which is so rank that it immediately grows up after explorers have removed it for the sake of getting a view of the ruins, and new explorers have to do the work over again.

Another feature is to be noticed: these ancient cities of the Old World were built near where there was an abundant

water supply, and generally upon rivers which furnished facilities for commerce as well as agriculture. It is well known that in Babylonia and Egypt irrigation had reached a high stage of perfection. The plains were covered with a net-work of canals, the remains of which are to be seen to this day. There was no irrigation practiced either in Greece or Syria, but the streams were numerous and the water supply abundant.

The cities of America were also situated where there was an abundant supply of water. Such was certainly the case in Mexico and Peru. The cities of Central America were not so well supplied, but they were always near some stream, or around some cenote or great well, which because of its water supply became sacred. It was the most important object, and often received offerings of gold and silver and precious stones, and even human bodies were thrown into them.

II. The commercial advantages of the ancient cities was important. It will be noticed that they are all near some sea,



ACROPOLIS AT ATHENS.

or near some water course. Many of them were in the midst of rich plains which were capable of being irrigated, and all were in localities where there were many resources, so that their wealth and power rapidly increased. We need not dwell upon this point, for it is well known that the cities of Egypt were upon one side of the Mediterranean, those of Greece upon another, Syria on a third, and between them were the islands upon which many remarkable cities have recently been discovered, such as Crete, Knossos and Cyprus. The cities of Babylonia were upon the Tigris, but were connected with those upon the Red Sea in eastern Africa upon one side, and those of India upon the other. The lines of communication being open to the coast of Asia upon the northeast, and northwest even reaching up as far as the borders of China

In America the cities were also near great bodies of water,

the Pacific upon one side, and the Atlantic and Gulf of Mexico on the other, and were in the midst of rich lands which could be cultivated by irrigation. The agricultural products united with the fruits gathered from the tropical vegetation made it very easy to secure, not only the necessities of life but the luxuries. One can easily see how that in America there could have arisen a form of civilization perfectly independent of any other, and that great progress in art and architecture might have been made without aid from any source. And yet the fact that there are so many resemblances between the styles which appeared here and those which were common in the eastern hemisphere, has led many to believe that there was a contact in prehistoric times. This conviction is based not so much on the fact that there were here such common things as boats, bridges, aqueducts, canals, roadways and fortified places, but in the general arrangement and group-



HILL FORTRESS IN PERU.

ing of buildings, the styles of ornamentation which appeared upon them, and especially the symbols which were embodied in their altars, temples, palaces and other buildings. Whatever we may say as to the antiquity of man upon this continent and the date at which architecture made its first appearance, yet we must look to the cities of the East for the first history of architecture and for its beginnings. Still we find the elements of architecture here, for many of these cities contain great buildings which are furnished with doorways, cornices, columns, coping, and roofs, all exhibiting a high degree of art; some of them are covered with sculptured figures, and occasionally with hieroglyphics, which show that much advancement had been made in art and architecture among the people.

The buildings in these cities showed a great variety of styles and uses, for there were palaces and temples, and shrines



and religious houses filled with courts and halls and many apartments; the ground plan of the palaces being almost identical with those which represent the ancient palaces of the East, and the arrangement or grouping of the palaces and temples, towers and courts being very similar. These cities are silent, and we must depend upon our imagination to realize the life which formerly existed. When, however, we read the history of those cities which the Spaniards discovered, and which were inhabited at the time they reached the continent, it becomes easy for us to rehabilitate them, and to fill them again with a life which has long since passed away. When we look upon the ruins which are scattered over the land, and see in them the signs of magnificence and wealth which prevailed, we are led to believe that the accounts of the early historians have not been exaggerated, for every city seemed to be full of palaces, temples, and halls, which were covered with barbaric ornaments, indicating that the ruling classes had great power over the common people. Near these palaces were courts and plazas, within which were statues, sculptured columns and tablets, which show that pride and luxury prevailed along with great wealth, exactly as in Oriental lands.

We have the record of Belshazzar's feast and the destruction which came upon the city of Babylon; we have, also, the story of Queen Esther, who, of all the women contained in the harem of the great monarch, was willing and able to save her own people from destruction; but the opinion is that in the great cities of America the same despotism was exercised by the ruling classes over the common people. Luxury and pride continued, and the resources of the land were taxed to the very utmost. The whole land was given over to its thralldom and the same calamity came upon the people that afterward came to the northern kingdom at the advent of the Spaniards.

III. The feature which was the most common, was an elevation which served as a citadel, commonly called the "acropolis." The temples and palaces were placed upon these heights, and often gave them the character of "fortress cities." Some of these citadels were with walls and some without, but the chief effort of architecture was expended upon their construction. They became the most prominent objects in the landscape and a most important feature to the cities. The majority of the cities of Central America were of this character, and were in consequence so similar in their general arrangement, that one might suppose that they were all built after the same pattern. A good example of this may be found at Xochicalco, situated about seventy-five miles from the City of Mexico, the ruins of which have been visited by many explorers. The following is the description by Mr. Bancroft :

Here is a natural elevation of conical form, with a base over 200 feet in circumference, rising to a plain of a height of nearly 400 feet. Mr.

Latrobe mentions a wall of large stones tightly wedged together, some of them eight feet wide, leading in straight lines toward the hill in each direction. A ditch, more or less filled up and overgrown with shrubbery, is said to extend entirely around the base of the hill. Near the southern entrance are two tunnels or two galleries, one of which extends a distance of eighty-two feet, with several branches running in different directions, the floor paved, walls supported by masonry, the principal gallery terminating after several hundred feet in a large apartment in which are two circular pillars cleft in the living rock to support the roof. The outer surface of the Hill of Flowers is covered from top to bottom with masonry. Five terraces paved with stone and mortar, supported by perpendicular walls, extend in oval form entirely around the circumference of the hill—one above the other. It is evident, from all accounts, that the whole surface of the hill was shaped, to some extent, artificially and was covered with stone work, and that defense was one object aimed at by the builders, that the supporting walls, projecting upward above, formed a parapet. On the summit is a platform 285 x 328 feet.

Within this parapet was a sunken area, which made the plaza, and near the center of the plaza was a pyramid, the lower story of which has a



PYRAMID OF QUEMADA.

rectangular base, which faced the cardinal points and measured 65 feet from east to west, and 58 feet north and south. The lower story is still standing to its full height; it is divided into what may be termed plinth, frieze and cornice, and is about 16 feet high.

The building itself is covered with a series of grotesque figures in the form of serpents, represented as rolling along the ground, with the head turned back and the mouth open—a form of decoration which was peculiar to this region, and which represented the mythology of the people. The whole hill, with its terrace artificially shaped and its massive structure upon the summit, reminds us of the artificial hills which are so common in the valley of the Tigris, in Syria, and other lands

East. These hills are known to mark the sites of great cities, and instead of marking the spot where a single city once stood, have been found to contain a succession of cities, thus carrying back the date of history many thousands of years. Great mounds have been found in Syria; the most famous is the "Mound of Many Cities," which Mr. Layard has excavated and described. There were also great mounds in Asia Minor and in Greece, which marked the sites of the cities of Troy, of Corinth, and of Mycenæ. In the New World, among which the earliest cities of the continent appeared there is some uncertainty. Some have thought it was what is called a ground race,—a race which bore different names, according to the locality where it was found,—African in Africa, Pelasgian in Greece, Etruscan in Rome, Dravidic in India, Maya in Central America, Quichua in Peru, and so on, followed by others. The Semitics in Syria, Crete and the islands of the Aegean, the Aryans in India and European countries. The Aryans in Persia and Epirus and Italy for the earliest architecture found in Europe, but it is to the so-called ground race that we ascribe all the rude stone monuments of Europe, Africa, Syria, Persia and India, though it is to the Aryans we ascribe those found in Peru. The pyramids, on the other hand, have generally been ascribed to the Egyptians, but those in Central America to the Mayas and Aztecs, who belong to an entirely different stock, their architecture being transmitted by the Toltecs to the Aztecs, though with many variations. The following quotation from Prof. Conrad Hoeblar will be appropriate:

The Aztecs had a special knowledge of architecture. In its religious character it was far above the animism and totemism of the wild tribes. It seems that religion played an extraordinary part in all their arts and crafts. Almost everywhere there are structures which show a high degree of taste and mechanical skill. The towns were found by the Spaniards in ruins. In the legends of the Indians the ruins were called *teotihuacanes*.

Between Nicaragua on the south and the valley of Mexico on the north lies the home of the oldest civilization of the New World. It is impossible to give exact dates for its beginnings, but if any one has a false conception of the New World considers the civilization of the Aztecs as the oldest, he does it great injustice. The native authors who write the history, occasionally carry the beginnings back as far as the pre-Christian era, and the dynasties which have been mentioned by the hieroglyphics go back nearly to that date. The Aztec civilization of America has undoubtedly passed through a uniform evolution, a civilization which seemed to be complete before the Spaniards came down from the north and invaded the country.

Not only the relics of the Maya civilization which lie hidden in the ruins of Nicaragua, Honduras, and Yucatan continue to increase, but now and again an unexpected discovery extends the area of the Aztec ruins, and new styles of architecture are found, which are distinguished by their elaborateness and perfection. In the district



of Chiapas, in the low forests of the Umasintla Valley, we must place not only the highest development of the Maya civilization, but also its earliest home. The southern boundary of the Maya district is as yet unknown, but it extended to the seacoast on either side, and left its ruins on the islands of the sea. On the north the characteristics of the Nahua make a sharp division, but on the south the style of the neighboring peoples is very indefinite. Within these boundaries the Maya civilization embraces an area of about 70,000 square miles.

As to the characteristics of the Maya architecture, the study of the monuments lead to the same results. The monuments of Copan, Palenque, and Chichen-Itza bear the marks of a uniform development. The fact becomes plain that it was not merely the result of a few individuals, who had arisen to the perfection of art, manifested by these works of architecture, but the entire race, for the ingenious system of writing and of arithmetical notation and chronology extends all over the land. On the high land of Guatemala, on the lowlands of the Umasintla Valley, in the far east of Cozumal, and in the far west, the works of the Maya people are seen. Today nearly all these places lie far from the roads, hidden in the depths of the forest. The very names of the places are forgotten; separated at no great distance, but reaching from the foot of the mountain to the sea, the ruined sites of Ocoingo, of Palenque, and of Piedras Negras are now seen, each forming a large town or city; the center of a religious and political life, around which a large population clustered.

The characteristics of the architecture of the Mayas are peculiar, they are pervaded with the Mythologic creations and were devoted to religious



DECORATED ROOM IN PHŒNICIA.

purposes. There are no profane buildings, but a great number of religious buildings of great extent and beauty. The conclusion offers itself at once, that the social and political life of the Mayas was of the utmost importance. The priests belonged to the ruling classes and had great power, and the kings were deified, for their statues were erected in the courts and were worshipped as idols, and offerings were placed before them.

V. It was during the reign of the priest-kings in America that the mythologic style of architecture appeared. Such was the case, however, everywhere. The mythologic ornaments differed according to the locality and according to the form of mythology which prevailed, yet there were many resemblances between them, and it will be well to examine these, for they illustrate the peculiarity of architecture at this particular stage.

In the far East, where domestic animals abounded, there were winged bulls with human heads, and human figures with birds' heads and wings. In Phœnicia there were lions, bulls and human figures, but without wings. In Greece and Persia, two lions with the column standing between them. In India

the elephant was a common ornament, but it was associated with the serpent. In Egypt there were human figures with dogs' heads; heads of the ibex, of the ape, of the ox, of the crocodile, and other animals which abounded in the region. In China the dragon was the most common ornament, but it was without wings. In Corea, the tiger. In Japan, the stork.



WINGED LION AT NINEVEH.

On the Northwest coast the bear and the raven were the common symbols, but these were mingled with the human figures in various attitudes. In Central America the serpent without wings was used, but generally having a human face, looking out from the

open jaws. In Peru the ornaments assumed a conventional shape, but the condor, the serpent, and the face of the sun were seen upon the façades of the temples and the gateways which led to the cemeteries.

In many countries plants were mingled with animals, but were highly conventionalized; the lotus being very common in Egypt; the honey suckle in Nineveh, and along with it the pine cone. In Central America the cornstalk, the tobacco leaf and other plants were used as ornaments, but they were associated with human figures and hieroglyphics. Human figures in grotesque attitudes were used as architectural ornaments, and were especially noticeable in the islands through the Pacific Ocean. These are suggestive of the mythology which prevailed. Specimens of them may be seen in the cuts.



HUMAN FIGURES IN SOLOMON ISLANDS.

At a later stage the column came into use as an architectural ornament. The first appearance of the column is in connection with the caves of Egypt. It also appeared very early in Persia, Babylonia and



Greece. The earliest form of the column in Greece, is that which appeared over the gateway at Mycenæ. It stands between two lion figures, but its position is reversed, as it tapers from the top to the bottom, rather from the bottom to the top, though it has the pediment and the capital. It was used as a support as well as an ornament, for it rests upon a heavy lintel and supports a capstone of an arch, the three-fold element of architecture being combined in one. In America the column was used as an ornament, but it had a highly conventionalized form. There was no pediment and no capital, but instead there were bands in relief about the middle of the column. Occasionally human figures and grecques are interspersed among the columns.



MYTHOLOGIC COLUMN  
FROM NEW ZEALAND.

The locality where the column is most numerous is in the Umasintla Valley, not far from the borders of Guatemala, in the region where the Maya tribes had their habitat. Here many palaces have been recently discovered and their forms of decoration made known by Mr. Teobert Maler. Descriptions have been published in *Globus*, accompanied by plates, two of which are reproduced and presented here. It will be seen from these plates that the columns are crowded close together and form the chief ornament on the entablature; one now placed between the cornice and the coping; other rows above and below. The Greek fret intervenes between the columns, giving great variety to the ornamentation. In other places the human figure is mingled with the columns. A palace is depicted in *Globus*, which has the conventionalized hook projecting from its façade. Another palace has a series of doorways whose piers are covered with hieroglyphics. Still another has a façade, with no columns but a beautiful leaf ornamentation. There is, also, here a square tower, the upper story of which has the Greek fret work, and the lower, the banded column. It may be said of all these palaces and buildings, that they exhibit a stage of architecture in which mythologic figures seem to have been gradually passing away, and conventional figures taking their place; a stage which reminds us of that which appeared in regions around the Mediterranean just before the beginnings of history. This change from the mythologic figures to the conventional forms is very interesting, for it suggests the idea that the law of evolution prevailed in architecture, as in all other things, an idea which has been elaborated by various authors.



VI. It is to this new style that we would call attention. It was a style which consisted in the use of columns as a decorative ornament, and in the banishment of many mythological figures which had preceded it. They are not perfect columns, for they lack the pediment and the capital, and yet they served the purpose, for they are very symmetrical and give an air of stateliness and refinement, which is in great contrast to the mythologic style which had prevailed. The cities in which this columnar style prevails are mainly in the Umasintla Valley, and yet they are so close to other cities, that one is led to wonder how they could have arisen. The conclusion is that they are perhaps more recent, and were possibly erected by another tribe or race.

There were, to be sure, as Mr. Charnay has shown, certain cities which abounded with square piers which resemble columns, but they were used as mechanical structures, rather than ornaments. There were also at Mitla, as Mr. Holmes has shown, piers which served as supports to the roofs and divided the doorways, and a few rounded columns, but both of these were designed as supports, rather than as ornaments. In the Umasintla Valley, on the other hand, the columns were used altogether as ornaments and there were no heavy piers. Here, the towns are scattered along the river and in the forests in great numbers, all presenting the same style of architecture; many of them, also, exhibiting altars and temples covered with hieroglyphics; some of them abounding with stelæ of even greater perfection than those found at Copan, Palenque, or any other locality. There were no such arched buildings, no such great pyramids, no such grouping of buildings, and yet the style of architecture was more advanced. The feathered snake, which was perhaps a symbol of the thunder among the Maya races, does not appear in this locality. In fact we meet with few traces of symbolism, but, on the other hand, human forms are seen in a great variety of attitudes, and the beauty of the drapery is not exceeded anywhere on the continent.

The question here arises as to the origin of these architectural ornaments. Did they arise independently of one another, or shall we ascribe them to the law of parallel development, or were they owing to the fact that they were introduced by people who were familiar with them in the Old World, and who had brought them with them in their migrations? In answer to this, we may say that the early stages of architecture were very much alike throughout the globe, but when we come to the advanced stages, we find that the differentiation becomes more pronounced and architecture arranges itself according to the styles which bear the names of the people among whom they originated, as the Ionic, Doric and Corinthian owed their names to the various tribes and nations which grew up in Greece; the Assyrian, Babylonian and Egyptian having the names of the people among whom they originated.

Architecture ranges itself among all nations under certain heads—devotional, memorial, civil, naval and domestic—but it has been found that in all countries the various structures, whatever their purpose or use, bear the stamp of the people who erected them, so that we may distinguish the works of one people from the works of another. This does not apply to the ordinary structures, such as houses, boats and bridges, for these are very similar in all countries. It is only when they reach a high degree of perfection, that they bear the stamp of the people who constructed them; and yet there were tribes in America and in the islands of the sea, who so impressed their own styles upon their handiwork, that we have no hesitation in deciding as to the people who constructed them.

VII. This furnishes another important point: there was a growth and progress of architecture in America which



SQUARE PIERS IN TULAN, MEXICO.

resembled that in the Old World in this respect: that the prevalence of mythologic creations gave place to the more conventional forms of art.

All great races have expressed themselves in distinctive ways in architecture, and may often be classified by their architectural elements.

From the ethnographic standpoint it would be profitable to give the broadest outlook, and yet view architecture retrospectively. The history of every period and every people is written in stone, for their architecture is one of the most numerous of all historic records. This, through the universal law of natural selection, has registered the progress of each nation, and has left the evidence of the inner consciousness of the people who have long since passed away. We are led to



believe that the course of true architecture has run in an unbroken stream through prehistoric times—one stage following another in regular succession—but without any radical change, and has been stayed in its onward course only by the advent of a foreign people, who have broken up all the habits of the aboriginal people and left the cities in ruins. The harmony which ever exists between the intellectual and social condition of man and his outward works was suspended and overthrown in that great convulsion, and architecture, as well as civilization, was left in a most shadowy condition.

Still, as we look upon the ruined cities scattered over the different parts of our own land, we are led to say that originality has never been more thoroughly displayed than in these sections of the New World. The component parts of each style may, indeed, have been borrowed from a previous condition and must be considered the products of an age which has passed away. But when it is once realized that a certain phase of architecture is the outcome of a certain phase of historic and geographic conditions, there will be no hesitation in considering it as a reliable indigenous record of the past.

There are many illustrations given to us by the structures of the New as well as of the Old World of the fact that the elementary principles are the same on all continents and among all people, but the differentiation takes place in the more advanced stages; the lowest stages showing to us the effect of the purpose to which a structure is devoted; but the highest stage showing the effect of the tastes and ideas of the people. The architecture of the Old World has been diligently studied, and all its peculiarities have been fully described. The lesson to be derived from it is that there was a double process in every land, viz.: a development from the lowest stages to the highest by the unaided energies of the same people, and the borrowing of ornaments and styles from other nations and incorporating them with those which had been adopted.

Every archæologist knows that the figures found over the gate at Mycenæ are very similar to those found on the tombs in Persia. The winged circle and sphinxes found in Assyria are similar to those found in Egypt. The winged bulls found in Phœnicia are similar to those found in Babylonia, and there is no hesitation in saying that they were transmitted. It is also well known that the stupas and pagodas and towers of China closely resembled those found in India, and there is no hesitation in ascribing them to Buddhism.

There are in America many ornaments which so resemble those found in the Old World, that it is difficult to account for them, unless we acknowledge that they were transmitted by some unknown source at some unknown time, and adopted by the people of this continent. Among these we may mention the serpent figures which are so common upon the façades of the palaces and temples of Central America and the stair-



ways which lead to the temples. These are supposed to symbolize the great nature powers, and by some are ascribed to a separate origin; but it is known that serpent worship prevailed throughout both continents, and was the earliest form of religion everywhere. The temples in China are surmounted by great dragon figures, carved with much skill. These have been ascribed to the contact with India, and traced back to a very early date. Similar figures have been found in Cashmere, and are supposed to have been introduced by the Buddhist priests.

It is supposed that architecture is the product of innate taste and always appealed to the sense of innate beauty, but as we go



COLLONADE AT BAALBEK.

back to its early stages and examine the ornaments and symbols embodied in it, we find that mythology had more effect than any other element, and what is very strange, the mythology is very similar in all countries. As proof of this, we need only to refer to the fact that the altars, temples, and even the palaces in America were covered with similar hideous objects, resembling those of China and India and Babylonia; and at times it seems as though these very symbols and ornaments had been transmitted from land to land, and finally reached this continent.

The symbols which are the most common, are those of the serpent and the tree, and these seem to have been recognized by such archæologists as Sir Arthur Evans in the ruins of Knossos and in Crete, conveying the idea that they were carried to that region by the Phœnicians, or some other race.

The lion and the tree has also been recognized in the rock-cut tombs of Persia, as well as at Mycenæ and Tiryns. The serpent symbols are very prominent in Cambodia, and serves



FRIEZE ORNAMENT AT PALENQUE.

the same purpose—that of a guard protecting the entrance to the temple. In front of the temple is a long pavement, on either side of which is a massive balustrade sculptured in the form of massive serpents, with fierce-looking heads and open jaws; the scales on their bodies and the curved form and uplifted head making them very impressive objects, and calculated to excite fear among all who approach them. The roll of the serpent and the position of the head are exceedingly life-like. There are also figures of serpents over the doorways of the Thlinkeet on the Northwest coast, which so closely resemble those seen on the coats of arms in the island of Borneo, that one is led to believe the symbol was transmitted from Asia to America.



TAU ORNAMENT AT PALENQUE.

There are, also, carved columns or stelæ at Copan in Central America, on which may be seen serpent figures running up



ARCH AT TIRYNS.

their whole length, held in the hands of dwarfs, whose faces and forms stand out in bold relief; the heads of the serpents being very conspicuous at the top of the column. The serpent is a common symbol in India, and Buddha is often represented as resting upon the back of a serpent, with many Naga heads forming a hood.

The question as to the dates is important in this connection. It has been ascertained by recent discoveries in the Mediterranean, as well as in the Tigris, that there were many palaces and temples, walled cities, and labyrinths



which were erected long before the days of Homer. These discoveries carry us back thousands of years, before we really find the beginnings, either of history or of art, or of architecture. What is more, they prove to us that there were migrations which extended through long distances, and reached not only the waters of the Mediterranean but the coasts of India, and possibly extended to the west coast of North America.

VIII. This is the lesson, which we learn from comparing the architecture of the Old World with that of the New World. There was probably a transmission of types and patterns, symbols and ornaments, which formed the basis of the architectural ornaments of the New World.

The continent may, indeed, have been settled by rude tribes, which made their way gradually from north to south, leaving



RUINED ARCH AT CAMALCALCO.

Tokens of their progress at various points. But as they reached the beautiful valley Mexico and the rich plains of Central America, they began to erect those structures which best served their convenience; making the pyramids above the surface of the ground, and placing upon the summits the houses of the rulers and surrounding them with all the magnificence which belonged to the despots of the East; but leaving the common people to occupy the huts similar to those which are found at the present date.

Examples of these points will be found in the various cuts; one of which illustrates a serpent or dragon figure which was sculptured upon the walls at Xochicalo or the "Hill of Flowers"; another represents the mythologic figure carved upon the wooden posts in New Zealand; another, the square piers and upright walls, which Charnay discovered at



Tulan in Mexico; another represents the columnar style which prevailed in the Umasintla Valley; still another, the columns which are still standing in the ruins of Baalbek. Other cuts represent the peculiar ornamentation which was common in Central America; an ornamentation which is founded upon mythology, but which had become so conventional that the original design can hardly be recognized. It, however, when studied, resolves itself into a manitou face. The hook representing the face, the peculiar vase-like ornament representing the eyes, the two curves representing the eyebrows, the square bosses representing the ears, rosettes above representing the forehead. This same conventional figure, with variation, may be seen on the sculptured front at Kabah.

There are also ornaments at Kabah and Labnah, and many other localities, some of which have features which are evidently designed to represent the faces of aborigines, but others have features which closely represent those of a white man. These various sculptured ornaments bring considerable confusion into the account, for while there is no hesitation in ascribing some of them to a native origin, others so resemble ornaments and symbols which are common in the Old World, that one is tempted to ascribe their presence to a transmission by some unknown means and at an unknown date. Among these latter are the Egyptian tau, the Greek fret, the scroll, the medallion, the lattice work, the crosses of various kinds, and the serpent figure. These are, to be sure, so blended with mythologic figures, that it is at times quite difficult to separate them, and yet there is a marked distinction between the two classes of ornaments.

Mr. Stephens speaks of the human face issuing from serpents' jaws and the hooked symbol extending beyond the



COLOSSAL HEAD AT IZAMAL.

corner. The frieze which surrounds it presents a series of small human figures, seated in the Eastern manner, with the right hand crossed on the breast and with massive plumes upon the head. Over the frieze was a cornice, decorated with very delicate designs in the form of meanders in the Greek style.

### CARYATIDE ARCHITECTURAL FIGURES.

BY JOSEPH OFFORD.

The recent discovery upon Greek soil of three different sets of Caryatide architectural figures, two of them by the French explorers at Delphi, and the third by the American excavators at Corinth, has revived the interest of archæologists in this form of the adaptation of the sculptor's art to the ornamentation of buildings. The classic view that the idea of producing such figures arose from a desire to record the attitude of Spartan maidens, when dancing at the annual Artemis festival at the town of Karyai, has long since been abandoned by scholars; as also the theory of Pausanias that they originated from the maiden Canephoræ, of the temple of Athene Pollias.

The concept, however, can with practical certainty be attributed to sacred basket bearers,\* (Canephoræ), and vase bearers (hydrophori) of the temple worshippers of Asia, and, perhaps, of Egypt. That the prototype of the Caryatides came from Asia Minor is rendered the more probable by the fact that the first artist known to have carved such figures in Greece, was an Ionian, Bathycles, of Magnesia, who placed Caryatides as ornaments upon the "Amyclean Throne." He constructed for the Lacedæmonians of Laconia; also the earliest Caryatides man knew. Those disinterred at Delphi are distinguished by the large dimensions of the polos; that is, the sort of turret, or basket, head dress which was an attribute of so many deities of Asia Minor, such as Demeter, Aphrodite and Cybele, and is an ornament frequently attached to figures of their hierophants.

If it is correct that the ancestor of the Caryatide figures is to be found in the Canephoric figures of Asia Minor and Mesopotamia; then the antiquity of their lineage becomes very high indeed, for these specimens of ancient art are among some of the earliest relics from Babylonia.

M. de Sarzec† found two such bronze figures at Tello, of the era of Dungi, and others dating from the time of kings Kudurmabuk and Arad-Sin, or Eriaku, are in the Louvre and

\* The priestess basket bearers are continually mentioned in the many Protomaic Demotic papyri translated by M. Revillout in his "Revue Egyptologie," and other works. These personages engaged in the deified worship of the Ptolemies, or in that of other gods, appear to have been ladies of the highest rank of Egyptian society, and daughters and wives of the upper hierarchy.

† "Deconverts en Chaldée," Plate 28, Figs. 1 and 2.

D. T. A. Evetts "The Canephoræ in Early Chaldean Art," Proceedings of the Society of Biblical Archaeology, 1891.



British Museum, whose reigns were about 2300 B. C. Of later date are reliefs in the British Museum of Assurbannipal and Samas-sum-ukin, supporting baskets of woven reeds above their heads placed upon their tiaras, with both hands. The interesting history of Canephoric figures of later times in Asia Minor and Greece might be written at great length; their popularity with Greek sculptors, especially, being very great; doubtless induced by the graceful attitudes of the women bearing water vessels, as well as by the religious Canephoræ, as many a modern painter has been inspired by the Arab and Fellahin women of Egypt and Syria at the present day.

The Canephoræ of Polycletus were especially famous and spoken of by Cicero and Symachus. They were copies of Greek maidens with head baskets, and were of bronze.

The two Caryatides first found at Delphi were in eleven fragments, which when pieced together proved they each carried a polos and capital. They therefore were architectural figures, and as they were among the débris of the "Treasury of the Cnidians," and the style of their polos reliefs is similar to that of the Gigantomachea sculpture of the Treasury, and the size of the statues is correct for the dimensions of the edifice, there is no doubt they formed part of it.

M. Homolle in describing them in the "Bulletin Correspondence Hellenique" says the sculpture is of Ionian type, which connects them, like the Amyclea throne figures of Bathycles, with Ionian artists, and their date is the 6th century B. C. M. Homolle thinks such figures are derived from the Canephoræ and hydrophoi, which were at first used, perhaps, for ex-votos in temples, and then as supports for mirrors, thrones, seats, and finally for buildings. As an Asiatic connection, he notes that Demeter was the great goddess of Cnidus, and she was also celebrated at Delphi, so that Caryatide figures were particularly appropriate for a Cnidian edifice at Delphi.

The introduction of Caryatide architectural adornments by the designer of the Cnidian-Treasury appears to have proved so popular a feature, that a similar form of ornament was shortly after selected for another building—the Treasury for Siphnos—which the people of that island erected in 525 B. C. We thus have preserved at Delphi specimens of these figures carved, as representatives appropriate for a town of Asia Minor and an island of the Ægean Sea. The figures are, however, of very similar character; the chief difference being that in one pair the relief figures upon the polos run all round it, like a frieze; whilst on the others, one face of each polos is thus ornamented with a bas-relief, placed between vertical mouldings, looking, therefore, like a carved metope, or plaque.

The Siphnos Treasury Caryatides are more similar to the beautiful ones, so familiar to all, upon the Erechtheum at Athens, than are those of the Cnidos building; but, as explained, both pairs at Delphi have the deep polos head gear,



instead of the shallow one of the Athenian examples. At the Erechtheum, also, the amulets above the polos are but two, and over them the egg-ornamented echinus is not of much depth; whereas the Siphnos Caryatides have five amulets, augmenting in depth from the lower to the upper, and a sort of carys-thenum-formed echinus, whose diameter is as great as the square of the abacus; whilst the echinus of the Erechtheum figures is considerably smaller than the superincumbent abacus.

It is interesting, when referring so particularly to Caryatides at Delphi, to note that the similar application of them to an edifice at Rome, was to the Tyropæan on the Appian Way, consecrated by Herodes Atticus; they, too, are connected with the Goddess Demeter, and also Herodes Atticus knew both Delphi and Cnidos well, and doubtless from Delphi and its treasures brought the idea of using Caryatides at Rome.

Caryatides are, though weight supports, not symbols of vengeance or humiliation, or specimens of vanquished persons; certainly not the female figures, with smiling faces and easy attitudes hitherto described. They have a sacred, almost divine, majesty and no symbol of slavery. They never appear oppressed by the weight above them, but pleased to serve as supports in a more or less sacred edifice.

Three Caryatides have, however, lately been found by United States explorers at Corinth, which appear to be the exception to this rule, for apparently they are emblematic of some victory over Gaulish or Northern invaders. The figures are males and appear to be intended for captives or effigies of slain personages. They may be found excellently depicted and described in the "American Journal of Archaeology."

In the very early relief, known as the "Vulture Stela" from Tell in Babylonia, there are basket bearers apparently covering with earth a mound of dead warriors, which has been erected for a religious memorial to the god who aided the victors. We do not yet know the exact symbolic meaning, or of what grade the basket bearers were; but they are not merely peasants or laborers, and perhaps some cuneiform inscription, or another monument, will throw light on the matter.

These notes are published with the object of calling attention to the new information upon this subject, which should in all future works upon architectural history, and Encyclopædias and Dictionaries be utilized and explained. No allusion has been made to the later ornamental Caryatides, such as those upon Pompeian furniture or decorations and frescoes, illustrations of which may be found in the best works upon Pompeii or Roman art. It has been more of an endeavor to trace the origin of their concept among the Hellenes, and thus, perhaps, indirectly throw light upon the direction of the derivation of many items of Greek culture and art.

## EXCAVATIONS AT ABYDOS.

BY W. M. FLINDERS PETRIE.

[Reprinted from the National Geographical Magazine, Septemb r, 1901.]

The following letter from Prof. Flinders Petrie to the *London Times* outlines his work at Abydos during the present year: To the Editor of the *Times*:

SIR: The continuation of the work of the Egypt Exploration Fund at Abydos this year has given a wider view of the early civilization, of which the general lines had been fixed by the previous work on the Royal Tombs and the town. The clearance of the old temple site over several acres has brought to light, in a depth of about twenty feet, no less than ten successive temples ranging in age from about 5000 to 500 B.C. For the first time we can see on one spot the changes from age to age through the whole of Egyptian history. To separate these buildings was an affair of anatomy rather than spade work; the walls of mud brick were so commingled with the soil that incessant section-cutting with a sharp knife was the only way to discriminate the brickwork. Often only a single course of bricks or a thin bed of foundation sand was all that told of the great buildings which had existed here for centuries. Over 5,000 measurements were taken for the plans and levels. The main result as regards the religion is that Osiris was not the original god of Abydos; the jackal god, Upuaut, and then the god of the West, Khentamenti, were honored here down to the twelfth dynasty. The most striking change is seen about the fourth dynasty, when the temple was abolished, and only a great hearth of burnt offering is found, full of votive clay substitutes for sacrifices. This exactly agrees with the account of Herodotus that Cheops had closed the temples and forbidden sacrifices. This materializing of history is made the more real by finding an ivory statuette of Cheops of the finest work, which shows for the first time the face and character of the great builder and organizer who made Egyptian government and civilization what it was for thousands of years after. This carving is now in the Cairo Museum.

The discoveries of the civilization of the first dynasty, the beginning of the kingdom, expand what we already had from my work in the Royal Tomb. Of Menes, the founder, we have part of a large globular vase of green glaze with his name inlaid in purple; thus polychrome glazing is taken back thousands of years before it was previously known to exist. The free use of great tiles of glaze for wall coverings shows how usual the art was then. In the highest art of delicate ivory carving there are several pieces of this age; especially the figure of an aged king, for its subtlety and character, stands in the first rank of such work, comparable to the finest carvings of Greece or Italy. We must now reckon the earliest monarchy as the equal of any later age in such technical and fine art.

Pottery, of forms and material quite unknown in Egypt, also belongs to this remote age; and it proves to be identical with that in Crete of the late neolithic age. This fresh connection illustrates the trade and the chronology of that period. A head of a camel modeled in pottery takes back its relation to Egypt some 4,000 years; hitherto no trace of it had appeared before Greek times. An ivory carving of a bear extends also the fauna of early Egypt.

The great fort long known as the Shunet ez Zebib is now connected with the remains of another fort, which was discovered between that and the Coptic Deir, which is a third fort. These buildings prove now to have been the fortified residences of the kings of the second dynasty, whose sealings we have found in the dwelling-rooms.

Of a later age may be noted some large decrees of the fifth and sixth dynasties, the oldest example of iron yet known, which is of the sixth dynasty, and in the eighteenth dynasty a great memorial tablet of the grandmother of that line, and the remains of a cliff temple of the type of Deir el Bahri. These are but the salient points of a winter's work of much historical interest.

Unhappily, the growing lawlessness of Egypt, which Lord Cromer noticed in each of his recent reports, has affected our work, and "a large number of offenses, not very serious in themselves, but which cumulatively become serious have been committed, and but too often have been committed with impunity.

A statue was stolen from my house, and though the footprint of the thief exactly agreed with the very peculiar foot of one of the men who were notoriously accused in the village, and all the links named by witnesses, yet no conviction could be obtained; £35 are said to have changed hands as bribes over this. Next, my workmen from Quft were subject to a general conspired assault in the market and each robbed of his money at once; but no redress whatever could be obtained. The police officer added to the injury by taking away one man, who had been beaten, to see the doctor, who did nothing but detain him till he paid 10s. bribe to be let go. Last year the relations of a man who died of fever were mulcted of £6 by another doctor, and on my complaining the official inquiry resulted in giving an account which was absurdly false, to my personal knowledge.

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#### AN AMERICAN'S GREAT DISCOVERY IN EGYPT.

To an American, Mr. Theodore M. Davies, is due the credit of what is regarded as by far the most interesting archæological discovery in Egypt of the last season. He has discovered the tomb of Thothmes IV., one of the Pharaohs of the eighteenth dynasty. An account of the discovery is thus given in *The New York Times*:



"Mr. Davies has been working systematically for the last two years in the Valley of the Tombs of the Kings at Thebes, clearing the rubbish away and laying bare the rock. He has made various interesting discoveries, but his success in finding a previously unknown royal tomb puts everything else that resulted from his labors completely in the shade. Mr. Davies was not present when the actual discovery of the tomb was made, that piece of luck falling to Howard Carter, inspector of the monuments of Upper Egypt for the Egyptian government, who has been assisting Mr. Davies.

"From *The London Times* we learn that the tomb, like the other royal tombs in the same valley, consists of a gallery cut into the heart of the mountain. After sloping downward for a considerable distance it is interrupted by a deep square well, on one of the walls of which is a band of paintings. On the further side of the well the passage turns back, and finally opens into a large chamber, at the extreme end of which is a magnificent sarcophagus of granite covered with texts from 'The Book of the Dead.'

"On either side are smaller chambers, the floor of one of which was found by Mr. Carter to be covered with mummified loins of beef, legs of mutton, and trussed ducks and geese, offerings made to the dead king. Clay seals with the name of the Pharaoh had been attached to the doors of the chambers, and, it is stated, these seals contain proof that the Egyptians of between three thousand and four thousand years ago had to some extent anticipated the invention of printing, the raised portions of the seals having been smeared with blue ink before being impressed on the clay.

"As Egyptologists know, there could be little hope of finding a mummy in the tomb, since the mummy of Thothmes IV. is already in the Cairo Museum, having been found in the tomb of Amen-hotep II., to which it had been carried by the priests for the purpose of concealment, probably at some time in the twenty-first dynasty. A great many of the objects in the tomb of Thothmes were found to be broken, and this was explained by a hieroglyphic inscription on one of the paintings which adorn the wall of the vestibule to the chamber in which the sarcophagus was found. The inscription states that the tomb was plundered by robbers, but that it had been restored as far as possible to its original condition by Hor-em-heb, the reigning Pharaoh.

"These robbers, it is supposed, secured the jewelry and other precious objects which it was customary to bury with a king. More than enough was left, however, to satisfy the archaeologist of today. The floor was literally covered with vases, dishes, symbols of life, and other objects of blue faience. Unfortunately, nearly all of them had been wantonly broken, though in some cases the breakage had been repaired in the time of Hor-em-heb. Intermixed with the faience were frag-

ments of exquisitely shaped cups and vases of rich blue or variegated glass. There are also fragments of an opaque white glass, as well as what would have been pronounced to be the bottoms of modern beer bottles had they been met with on the surface of the ground. Equally interesting is a piece of textile fabric into which hieroglyphic characters of different colors have been woven with such wonderful skill as to present the appearance of painting on linen.

"It is, however, of course, the Pharaoh's chariot which is regarded as the great find. The body of it alone is preserved, but in a perfect condition. The wooden frame was first covered with papier-maché made from papyrus, and this again with stucco, which had been carved both inside and out, into scenes from the battles fought by the Pharaoh in Syria. The art is of a very high order, every detail being exquisitely finished and the faces of the Syrians being clearly portraits taken from captives at Thebes. The chariot is, in fact, one of the finest specimens of art that have come down to us from antiquity. Along with the chariot was found the leather gauntlet with which the king protected his hand and wrist when using the bow or reins."—*Christain Advocate*.

#### DESTRUCTION OF MONUMENTS IN EGYPT.

In an article entitled "Notes from the Nile," by John Warde, F. S. A., Belfast, contained in *The Antiquary* for September, we find the following deplorable facts:

"After leaving Cairo, the panorama of pyramids seen from the Nile is very fine, and continues for twenty or thirty miles. Many of them are now mere heaps of ruins, though underneath some of the piles of confused stones the ancient royalties still repose, but all have not been opened, unless by adventurous robbers of 2,000 years ago may have tunnelled from without, in their search for jewels and gold. We passed the great pyramid plateau of Gizeh, with the finest of all monuments and the oldest of their class; then a succession of angular structures, at regular intervals, ranged along a desert terrace some three or four miles from the river, each one once contained a mummy king and treasures buried with him, for use in the world to come.

"The pyramid of Sakkara next comes in sight, and many heaps of stones around it. One of these heaps was found to contain a coffin and the remains of a king, who lived 5,000 years ago. Some miles southward, pyramids built of sun dried brick, but were anciently plated with polished slabs of limestone almost like fine white marble, all of which was stolen from them long ago. But De Morgan found the outer courses of the marble slabs buried in the sand. He also found the tombs of princesses of the great twelfth dynasty, with their

gold and precious stone ornaments, valued at £70,000. Their royal fathers must have had much greater treasures, but these had been rifled in ancient times. There are two stone pyramids near this, which have never been opened.

"We sailed along some twenty miles and then another grand pyramid came in sight. We saw it for an entire day. This is the Pyramid of Medum; it is built of stone, and the workmanship is superb. Only the central core has been left. It is much older than the Pyramid of Gizeh, and from its commanding position, it must have been the first object of them all, when perfect. It has been used as a monument for 2,000 years and is still an imposing monument. The cliffs now approach the river on each side.

"The demand for lime and building stone is now so great, owing to Egypt's prosperity, that the ancient houses of the dead have no respect paid to them. Temples which existed near the river bank have been thrown down, and the stones used for building sugar factories. Within the last five years this destruction of ancient monuments has been largely carried on without any interference of the government. Nothing is sacred to the money-getting companies who own the sugar mills.

"We passed frequently great mounds of brick and tiles marking the sites of ancient cities now completely deserted. We decided to land and make a pilgrimage to the great mounds of rubbish which marked the site of the once great city of the god of letters, art, and refinement, sacred to Thoth, who was similar to the Hermes of the Greeks.

"Here is a busy town, the seat of one of the greatest sugar manufactories of the country. It is in the midst of a very fertile district. All the land here about produces three crops in the year, and when the great reservoir is completed and the perennial irrigation is established, four annual crops will be possible. The sugar cane cultivation extends for miles along a branch of the great Ibrahimieh Canal. The sugar cane needs constant irrigation at the early stages of its growth, and the canal at high level, brought from the Nile many miles higher up, waters this fertile district. The Egyptian people are becoming rich with constant employment: even in Cairo nobody asks for baksheesh.

"At length we reached our city. Mounds of ruins, fifty feet high, extended for a mile in length, and more in width. Nothing will grow on these mounds of rubbish, and yet when they are hollowed out, the dirty looking stuff, when pulverized and spread over the fields, acts as the most productive of manures; it is full of nitrates and phosphates, and the rich crops of the country are due to it. Every ruined city is a mine of wealth to sebah hunters, who dig it up and sift it, and carry the dirty stuff away on donkey backs to spread on the land. As a consequence the remains of these lost cities, uninhabited for over



4,000 years, are gradually being carried off for fertilizing purposes. Many ancient towns, buried deeply beneath decayed dwellings many centuries ago, are brought to light. The sebah diggers had unearthed a temple of Seti II., who reigned 1180 B. C., son of Meremtah, the Pharaoh whose army perished in the Red Sea. They not only found the temple and inscriptions, but two fine portraits of Pharaoh himself. Within the last few days the sebah diggers had unearthed a far older temple, built by a much older king. This was Amenemhat II. of the twelfth dynasty, who lived 2,700 years before our era. The engraving of his name and title is far finer than those of Seti, the later king, for in Egypt the art is better the farther it goes back.

"On our way homewards we saw a magnificent stone statue of Rameses the Great. At this place there was, fifty years ago, one of the finest temples in Egypt, with columns over fifty feet in height, and awnings quite perfect, with the original paintings still adhering to them. This was wantonly destroyed to secure stone for the great sugar factory at Roda. Not one of the beautifully-carved and painted stones were left. The sculptures of much older date were buried forty or fifty feet beneath the ruins of the old town, which had existed for 2,000 years over the temples of forgotten gods. This old city of Thoth, the patron of letters, is known to have had a library of importance, as it is alluded to in inscriptions.

"We finally reached Assabut, the capital of the province. The old town is about a half mile from the Nile, and the present population is 50,000, the largest population in Upper Egypt, and is the chief center of the Coptic population, who are the descendants of the ancient Egyptians and a very interesting people. The secondary dam of the great Nile reservoir is here. It is a handsome structure, nearly a mile long, and almost completed. It has 111 arches, each fitted with sluices which will raise the Nile, so as to supply water by gravitation for fertilizing the land for more than 100 miles, and carrying an increasing water to the Libyan desert. Before leaving Assabut, we climbed to the mountain near the town, where the tombs of the old kings of the eleventh dynasty are still to be seen. Vast chambers hewn in the rock covered with hieroglyphic inscriptions carved in the rock much defaced. Here, I found the cartouche of King Ka-me-ri-ra, who lived 3106 B.C., but of whom nothing more is known. The view from this point is splendid: a wide, rich level of cultivated land, with the Nile winding through it, an isle in the midst of brilliant green, and far away a great dam spans the river—a mile of masonry."

## ARCHÆOLOGICAL DISCOVERIES IN EGYPT.

BY PROFESSOR DR. GEORG STEINDORF.

[Reprinted from "The Sunday School Times," September 13, 1903.]

It is probable that in no previous winter have such extensive and successful archæological researches been made in Egypt as in that of 1903. Representatives of almost every nation—Englishmen, Americans, Frenchmen, Italians, and Germans—vied with one another, and nearly all returned home with something to their credit. I myself was in Egypt during the past winter, conducted an excavation, and saw much of the work of my colleagues. I am, therefore, enabled to report on many things from personal observation.

Of the English excavations, the first to be mentioned are those of John Garstang, one of the younger archæologists of the school of W. M. Flinders Petrie, made in the necropolis of Beni-hassen, for the Liverpool and several private collections. Beni-hassen, situated on the western bank of the Nile, in Upper Egypt, somewhat to the south of Minje, the provincial capital, has for a long time been famous on account of its splendid rock-tombs from the period of the middle kingdom (2000 B. C.), and is one of the places in Egypt most frequented by tourists. Here, in the rock-cliff in which the catacombs of the ancient monarchs are found, Garstang laid bare a large number of new small tombs, and discovered in these an extensive and varied assortment of articles which had been deposited with the dead in their last resting-place. These throw a very bright light upon the every-day life and the burial customs in vogue at about 2000 B. C. The tombs themselves are, in most cases, those of petty officials.

The added contents of these tombs consist chiefly of crudely made models of things which the deceased was supposed to need in the other world. Among these are row-boats and sailing-vessels fully rigged and equipped, with crew on board, some of whom are hoisting the sails. On one an armed negro is seen among the sailors, whilst beneath a baldachin, guarded by armed men, two officers are engaged in a game. On this little vessel the deceased is to sail about on the celestial waters as he did on the Nile and its canals. Miniature storehouses and kitchen gardens, constructed of wood, are to furnish his nourishment. In these are seen women kneading dough, men brewing beer, and others killing an ox, or bringing water in vessels suspended from a yoke. A large number of women carry buckets on their heads, and one is in the act of bearing several geese to the deceased. A few of the models illustrate the process of storing grain in the warehouses, clerks note down the number of bags delivered, and farm-hands are seen at work with the hoe.

Interesting are the real bedsteads found in these tombs, made of wood, and having wooden pillows. The headpiece of

the bed of a woman of rank is of alabaster. This bed was found in a tomb which also contained two small boxes constructed of ebony and ivory, and which show very careful and artistic workmanship. Among other contents of these tombs may also be mentioned bows, boomerangs, many baskets and musical instruments, vessels of unbaked clay and alabaster, ornaments, chains, etc. Worthy of notice is also the figure of a Libyan woman carrying her baby on her back. That these tombs also abound in inscriptions, gravestones, and coffins is almost self-evident.

More interesting still are the excavations made by W. M. Flinders Petrie himself in the necropolis of Abydos, which for three years past he has been exploring under commission of the Egypt Exploration Fund. In exhuming the ancient temple, no less than ten successive layers of the ruins of old sanctuaries were brought to light in a depth of twenty feet. To separate these different layers was an exceedingly difficult piece of work, almost anatomical in character. For the history of religion, these excavations established the important fact that, according to Petrie's assumption, Osiris was not the original chief god of Abydos, but that in the most ancient times the jackal-god Up-uat was worshipped at this place.

Among the many finds, the first place must be assigned to a small ivory statuette of finest workmanship, representing in an extraordinary lifelike manner King Cheops, the well-known builder of the great pyramid of Gizeh. In this we possess one of the oldest portraits of Egyptian royalty. Of interest to the student of industrial art, is the fragment of a large vase of green glass, bearing the name of Menes, the first historic king of Egypt, and dating from the time of this ruler (about 3000 B. C.). Hitherto it was supposed that glass of different colors was not produced in Egypt earlier than the middle of the second millennium B. C., but this new find demonstrates that this art was likewise practiced in the valley of the Nile at a time much more remote. It has also been discovered that at this early period glazed tile was already used to cover walls. To this oldest period also belong various ivory carvings of finest workmanship. One of these, the figure of an old Pharaoh, is especially excellent, and need not fear comparison with the best carvings of the Greeks and Romans.

Some years ago, Petrie had already found in the brick-tombs of the oldest kings of Abydos fragments of vessels which in form, material, and ornamentation were decidedly un-Egyptian, and which led him to conclude that they had been imported, chiefly from the Ægean Islands of Greece. Now he has again discovered similar pottery, quite identical with that found in Crete, and of the late neolithic period. This throws a new light upon the communications which Egypt had with Europe in the most ancient times,—somewhere near the beginning of the third millennium B. C.



Of the happy find made this year by Mr. Davis, an American excavator, in discovering the rock-tomb of Thothmes IV., I spoke in my last report. I have now also seen many objects taken from this royal tomb, which are preserved in the museum at Cairo. Most of them are of the same kind as those from Amenophis II., the predecessor of Thothmes IV., discovered several years ago in western Thèbes (Bibân-el-molûk), by Mr. Loret, and consists of fragments of beautiful vases and magnificent glass vessels, statuettes of the dead, and other objects.

Not far from the tomb of Thothmes IV. another royal tomb has been discovered. From the documents here found it is learned that this is none other than the long-sought tomb of the celebrated queen Hatshepsowet, the sister and wife of Thothmes III., who brought Palestine under Egyptian rule. This tomb is situated exactly on the axis of the temple of Déir-el-bahari, built by this queen on an eastern cliff of the valley of Bibân-el-mulûk. So far only a short stretch of the rock-cut corridor has been penetrated. The opening of the inner chambers has been postponed until next winter; and to this event we may well look forward with the keenest expectations, inasmuch as the inscriptions in this tomb may help to solve many historical enigmas that connect with the person of this queen.

For the University of California, Dr. Reisner has still further excavated the extensive cemeteries of Naga Deir, opposite Girgeh, in the exploration of which he has been engaged for some years. Here rows of tombs dating from the Middle Kingdom (2000 B. C.) were searched. In one of the tombs, deposited on a coffin, and in a fair state of preservation, was found a heap of ancient Egyptian papyrus-rolls.

Near the pyramids of Sakkarah the excavations begun by the Egyptian Service des Antiquités were continued, and a new tomb dating from the time of the Persian occupation was discovered. The contents of this tomb consisted of numerous small, neat amulets of gold and ornaments. Of special interest is a small tree, about three-eighths of an inch high, on which a bird is seated.

Passing over the less important excavations undertaken by Frenchmen and Italians at different places in Upper Egypt, let me yet briefly speak of the German excavations. During the last winter the German Oriental Society continued its work near the pyramid of King Ne-woser-re of the fifth dynasty. Here a portion of the sepulchral temple dedicated to the worship of the deceased monarch had already been laid bare. During the past winter additional ruins were uncovered, exposing to our view still further this very ancient sanctuary. Some of the stone-tombs, or so-called mastabas, in the neighborhood of the pyramids were likewise excavated, chief among them the extensive burial-place of a princess of the family of the Pharaohs. Further explorations were also made in the Greek

cemetery, which in the preceding year had yielded a large number of wonderful wooden-coffins and the now celebrated papyrus of Timotheus of Miletus. Here were found, besides broken coffins, three perfectly preserved tombs. With the coffins were deposited alabaster vases, Attic pottery, fruits (hazel nuts, almonds), sandals, shoes, old bread, etc. In the skull or on the tongue of two of the deceased was found a small Attic silver coin, which was no doubt intended for Charon as fare.

On the extensive pyramid plain of Gizeh, near the wonderful structures of Cheops, Chephren, and Mycerinus, an English private citizen, Mr. Ballard, this last year made a successful excavation. Hitherto the Egyptian government had denied every foreign scholar access to this interesting territory; but this old right of reservation was waived when the field was opened to one who had not been scientifically trained. In view of this, three scholars have sought admission to this promising region.

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#### PROPOSED CHANGE OF NAME.

Hudson Bay has not been inaptly termed the Mediterranean of North America. It covers an area outside the Arctic zone, of about 600,000 square miles, and, as if to identify these waters more closely with Canada's contention, a private bill is now before the federal parliament seeking to change the name of Hudson Bay on the map to that of "The Canadian Sea." Hudson Bay is remarkably free from rocks and shoals, and it has an average depth of about 420 feet. So uniform are the soundings, that Dr. Bell of the Canadian geological survey states that if, through any convulsion of nature, this vast basin were to be drained, its bottom would be found as level as the western prairies. This authority also says that storms are very rare in Hudson Bay; icebergs are never seen; fogs never occur, and the climate of the coasts, during summer is so mild that vegetables are easily grown in the open air. Dr. Bell asserts that the temperature of the water in this bay is several degrees higher than that of Lake Superior.

The only practicable approach to Hudson Bay by water is through Hudson Strait, a deep channel about 500 miles long and of an average breadth of 100 miles, the width at its narrowest part being not more than forty-five miles, and it is wonderfully free from shoals, or rocks, or other obstacles that tend to make navigation dangerous.

## SUN DANCE OF THE PONCA INDIANS.

There is no more important event in the annals of the American Indians than the sun dance of the Ponca tribe. This year the Ponca Indians were more liberal than usual, and for the first time in the history of the tribe allowed a photograph to be taken of the dance.

The dance is held in the month of June every year, and this season was held near Bliss, O. T., upon a plain on the Ponca reservation, says the *St. Louis Republic*.

To those who are unaccustomed to the ways of the aboriginal American his manners are interesting, and in all his religious observances there is no more notable event than the sun dance.

In this dance the sun is worshiped as the all-seeing eye of the Deity, and when it is over the Deity has seen all that is in the hearts of the Indians and toward his fellow men every Indian is at peace. It is a time of repentance and also thanksgiving. All old grudges are wiped out and through this ceremony there is nothing but the best of feeling.

The sun dance lasts for three days and three nights, and during that time the dancers neither eat nor drink. The pipe is their only nourishment during this trying time. Of late years, however, they have been liberally supplied with soda water, which they drink and do not think they are violating any of the precepts.

The squaws go to the dancing grounds several days before the ceremonies are to commence and build an inclosure of boughs. This is about fifty feet in diameter. When it has been decided by the leaders of the different bands, the medicine man of each band takes his braves into his tepee, and, while conducting the ceremony necessary, before the dance begins, he paints each one of the young men who is to take part in the dance. In all the years this dance has been held, it is said each clan or band of Indians has retained the peculiar painting adopted by it years ago.

Some have a particular shade of yellow. Others have stripes across their breasts, while others, perhaps, have a peculiar character painted upon their heads. In this way one familiar with the markings can readily tell with which of the bands an Indian belongs.

When the time for the dance comes the dancers all repair to the tabernacle where the dance is to take place. There they are seated upon the ground in a circle and with only a scant attire solemnly await the pleasure of the chief, who is to come and start the dance.

For thirty-eight years this has been the duty of Chief White Eagle. He approaches the center of the tabernacle, where a large tree has been planted, and according to the annual customs explains that the dance is only for the brave, and no



others can take part. He then asks if any wish to withdraw. Never yet has an Indian been known to quit. He does not expect it, and if one should back out the disgrace would not only be upon the Indian himself but upon the chief as well. Receiving no reply to his question, the chief takes up the buffalo head, which has been placed near the center of the tabernacle, and, holding it high in the air, slowly repeats the words that start the dance. At this the dancers all rise to their feet and as the chief approaches the drums he accepts the drum-stick offered to him by one of the drummers and strikes the drum, thus giving the signal that the dance is on. The drummers keep up their work for nearly an hour, and then, as the dancers show signs of tiring, they stop and the dancers rest for a time.

This is kept up for three days and three nights, and on the last day the dance is going on almost continually, until the dancers often fall from exhaustion. When the dance is over then comes the feast. Cattle are butchered and the squaws serve all members of the Ponca tribe and all the visitors with beef.

During the time the sun dance is in progress the other members of the tribe conduct their scalp dance, and the squaws have what is called the squaw dance.

It is also customary during the sun dance to give gifts to all the friends in the tribe, and at the dance just closed it has been estimated that no less than \$50,000 worth of ponies and fine cloth were given away. These gifts are provided by the families of Indians who have died, and are supposed to be given by spirits of the dead Indians. This is one of the most interesting sights of the dance. The members of the tribe, barring the dancers, gather in a circle and some head man of the tribe, or a visiting chief, takes his place in the center, where he receives the gifts and then in a loud voice calls the Indians who are to receive the gifts. As an Indian is called he or she approaches the center of the circle and bows the head. The chief repeats the name of the giver and it is received by the other.

Standing Bear, chief of the Nebraska Poncas, and members of his tribe, visited the Oklahoma Poncas this year, and Standing Bear officiated in the center of the gift circle.

So far as is known there are only three white men who were ever allowed to dance with the Indians in their sun dance. These are the three sons of George W. Miller, who have the 101 ranch, the largest in Oklahoma, a part of which is leased from the Poncas. Every year these boys dress in their costumes and join in the dance. This year Joe Miller, the eldest of the three, received from Chief White Eagle two \$20 gold pieces.

The last dance was a more notable one than any that has been held in more than a quarter of a century, because it marked the retirement of Chief White Eagle from the leader-

ship of the tribe. He was succeeded by Horse Chief, his son.

White Eagle has been in rule of the tribe for thirty-eight years and has made a good leader. He claims he has always been friendly to the whites and has counseled his people to follow in the way of the white man. He is a magnificent specimen of manhood. He is tall and strong, in spite of the 78 years of his life. He is rather more intelligent than would be supposed and has lived up to the treaty he made with President Johnson in 1867. At that time he, in company with seven other chiefs, was called to Washington and made treaties. While they were there the government had cast by a special act of congress eight medals, and one was presented to each chief.

White Eagle says he is the only one of the eight left and his is the only one of the medals now worn by an Indian. The medal is a piece of property of which the old chief is very proud. It is of silver, and upon one side is the likeness of President Johnson, while upon the other are two clasped hands. The eight chiefs agreed that when they died these medals were to be buried with them.

When asked how long the sun dance has been in vogue, he answered: "As many years as there are leaves on the trees."



#### THE PHILIPPINE TREE DWELLERS.

The Philippines may not boast of a "wild man" just like the popular conception of the man from Borneo, but they contain tree dwellers quite as much as does Borneo. Indeed, it is probable that the tree dwellers of northern Luzon are close kindred of the Dyaks of interior Borneo, who live above the ground. In both cases those who find it advisable to live where they can drop rocks, sticks, etc., on invaders' heads are offshoots of a head-hunting race. It is true that the most thoroughgoing head hunters of the Philippines, the Igorrotes of Bontoc, a little province in the north central mountain chain of Luzon, live in houses built on the ground, but at their altitude few trees grow save mountain pines, and natural conditions have made them forget their tree-dwelling habits generations ago. The Luzon tree dwellers live further down, on the eastern slope of the mountains, even down in the valley of the Rio Grande de Cagayan. They are cousins of the Bontoc Igorrotes, and doubtless cousins, longer separated, of the Borneo Dyaks.

## EDITORIAL.

### CLAN VILLAGES AND ANCIENT CITIES.

We next take up the study of the village life, with a special regard to the relation of the villages to the cities. It will be understood that village life was very common throughout the continent of America, and was the form of life which prevailed among the uncivilized tribes. It was only among what may be called the civilized tribes that cities were found. This was the case in other countries also. In fact there is no land on the face of the earth in which villages did not precede cities, and in many of them villages have continued to this day, as the peo-



VILLAGE IN INDIA.

ple never reached that social condition in which cities are likely to appear.

There are villages in India at the present time which remind us of those which existed in other lands in the earliest times, when man was associated with extinct animals. In these the houses are placed on the tree tops and are reached by ladders, and elephants are seen beneath the houses. These elephants have been tamed, but there was a time when men placed their houses on the tree tops to escape wild animals.

There are also many villages scattered through the continent of Africa, some of which are surrounded by stockades and are upon hill tops; others are in the valleys and are without defense, the houses being clustered close together. A common method of defending a village in Africa was by placing two stockades in the form of a circle, one inside the other, placing



the houses between palisades, and leaving an open space in the interior, which was used as a coral. The cattle were kept within the enclosure by the gateway through which all passed, but were guarded by the people who lived in the outer circle.

The villages in Europe were frequently placed upon platforms which were raised above the water, and were protected against attack of wild animals by this means. The approach to the village was by a narrow passageway, which could be easily protected. There are villages resembling these in the Philippine Islands, at the present day. Others may be seen at Benares and various localities in Oceanica. There were also lake villages in America at the time of the Discovery. These were visited by Americus Vesputius, and so resembled the cities of Venice that the name of Venezuela was given to the whole province.



VILLAGE IN AFRICA.

Now, it is owing to this prevalence of village life in America that certain writers, such as Mr. L. H. Morgan and Mr. E. J. Payne, have come to the conclusion that there were no cities on this continent, but those which were called cities by the Spanish explorers were nothing more than large villages and they have given to them the name "pueblos," and rejected the word "cities" altogether. Mr. Morgan says:

Three distinct phases of society, each with a culture peculiar to itself, lie back of civilization, back of the upper status of barbarism, having very little in common with European or American society of today. Its institutions, its inventions, and its customs, give no analogies to those of civilization and cannot be explained in terms adapted to such a society. The Spaniards, who over-ran Mexico and Peru, gave a very incorrect interpretation, having found, as they supposed, two absolute monarchies with feudal characteristics. The history of American institutions was cast in this mould.

It was a calamity to the entire red race that the achievements of the Village Indians of Mexico and Central America, that the development of their institutions should have suffered a shipwreck so total. The only thing to be done, is to recover, if possible, a knowledge of their institutions, which alone can properly place them in the history of mankind. In order to understand this, we must have a knowledge of several classes of facts; first, the organization into gentes, phratries, and tribes; second, the ownership of land in common; third, the law of hospitality; fourth, the practice of communism in living; sixth, the communal character of their houses, and seventh, their separation at meals, the men eating first, the women afterwards.

Other writers take the clan life as furnishing the clue to all society, and maintain that the city was occupied by different clans and that the king was only a clan chief, and therefore the name pueblo should be applied to every city. In proof of this, they refer to the fact that even the City of Mexico was divided into four quarters, in which clans were localized; each quarter with its separate temple in which each clan offered a sacrifice.

Even in Peru the cities were made up of localized clans, each of which had its own idols or "huacas," who were supposed to be the guardians of the pueblo, and from whom the clans properly borrowed their names. In Peru each clan which lived in a city was called an "ayllu," or "united kin." In Mexico it was called "calpuli," or "great house," as the great house of the forest tribes was replaced by these great houses in the city. The land around the city extending to a considerable distance belonged to the clans. Mr. Morgan says:

The first eye-witnesses gave the keynote to history by introducing Montezuma as a king occupying a palace of great extent, crowded with retainers and situated in the midst of a grand and populous city, over which he was the reputed master. The valley of Mexico, including the adjacent mountain slopes, was about equal to the state of Rhode Island. The confederacy had subdued several tribes and placed them under tribute. The population of the three confederate tribes was confined to the valley, and did not probably exceed 250,000 souls, which would give nearly twice the present population of New York to the square mile. \* \* \*

In the Aztec confederacy they had a prince, or war chief, who was elected for life; behind this war chief was the council of chiefs. Civil and military powers of government were in a certain sense conducted between the council of chiefs and the military commander.

Not a vestige of the ancient pueblo of Mexico remains to assist us to a knowledge of its architecture. Its situation, partly on dry land and partly in the waters of the lake, formed by causeways and dykes, led to the formation of streets and squares which were usual to the Indian pueblos, and gave it a remarkable appearance.\*

There is an element of fact in this view, but it only presents one side, for the villages, which were founded upon the clan organization, grew ultimately into cities and came under the rule of chiefs, who had all the authority of feudal despots and Asiatic monarchs, and were very different from the villages called "pueblos." This is shown by the accounts which have been written by the Spanish explorers and historians, and by the descriptions of the modern writers.

It should be said that the Spaniards were not, at the time, acquainted with the science of ethnology, and if they had been, it was not likely that the conquerors would stop to examine into the organization of society, and to study the social institutions which existed. Their ideas were based partly upon the feudal customs of Europe. Their expectations had been aroused by the descriptions of China and the far East, which had come to them by the writings of Marco Polo and others,

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\* See Morgan's "Houses and House Life," p. 195

and they could not believe that the continent of America was anything else than the eastern portion of Asia.

The city was indeed occupied by different clans, but its government was quite different from that of a clan village, in fact as different as a monarchy is different from a democracy. The pueblo in its simple form possesses no actual historical importance, though it marks one stage of social progress. Instead of being a clan village, it is a village which consisted of several clans; a compound society organized into a group, and held together by a bond of affinity and laws of descent, and having all things in common. On the other hand, the city had many new features which are not found in the clan village or pueblo.

It will be acknowledged that there are many analogies between the communal houses of the Pueblo Indians of New



LAKE VILLAGE IN EUROPE.

Mexico and the so-called long houses of the Iroquois. There are also analogies between the pueblos and the villages of the Cliff-Dwellers. But there were great contrasts between all these villages and the cities which the Spaniards found in Mexico, Central America and Peru, for these were controlled by monarchs, who ruled the people with despotic sway and were sustained by the priests, who played upon the superstitions of the common people and made them subject to their authority. In Peru there were deified kings, who were supposed to be children of the sun, and all of their kindred constituted a class by themselves. There are also in Central America statues of kings, which show that even here the kings were deified.

Such is the evidence of archæology. It is also confirmed by history and especially by the history written by the early Spanish explorers.



Herrera describes the City of Mexico, as follows:

There were three sorts of broad and spacious streets. One sort all water and bridges; another, all earth, and a third, earth and water, there being a space to walk along on land and the rest for canoes to pass; so that most of the streets had walks on the sides, and water in the middle.\*

Many of the houses were large, far beyond the supposable wants of a single Indian family. They were constructed of adobe, brick and stone, and plastered over with gypsum of brilliant white. Some of the houses were constructed on three sides of a court; others surrounded an open court, like the house of the nuns at Uxmal.

Clavigero remarks that:

"The houses of the lords and people of circumstance were built with stone and lime. They consisted of two floors, having halls, large courtyards, and the chambers thickly disposed; the roofs were flat and terraced; the walls were so well whitened, polished and shining, that they appeared to the Spaniards, at a distance, to have been silver. The floor was plastered, perfectly level, plain and smooth. The walls were of stone, the timber work well wrought; there were many and spacious rooms, hung with cotton hangings, extraordinarily rich in their way."

Cortez made his entrance into the city with 450 Spaniards, accompanied by 1,000 Tlascalan allies. They were lodged in a vacant palace of Montezuma's father.

Diaz says:

"The whole of this palace was very light, airy, clean and pleasant, the entry being through a great court. Montezuma, after receiving Cortez, returned along the street until he reached a large and splendid palace in which we were to be quartered. He took him by the hand into a spacious salon through which we had entered."

Herrera says:

"Being lodged in so large a house that, though it seems incredible, contained so many spacious rooms with bed chambers that 150 Spaniards all lie single. It was also worthy of observing, that though the house was so big, every part of it, to the last corner, was very clean, neat, matted and hung with cotton and feather-work of several colors, and had beds and mats, with pavilions over them. No man, of whatever quality, had any other sort of bed; no other being used." \* \* \*

"The palace of Montezuma had twenty gates, all of them in the square or market place and the principal streets, and three spacious courts, and one of them a very large fountain. There were many halls 100 feet in length, and rooms of 130 feet, and 100 baths. The timber work was small, without nails, but very fine and strong, which the Spaniards much admired. The walls were of marble, jasper, porphyry, white stone and another sort that is transparent. The roofs were of wood, well wrought, and carved. The rooms were painted and matted, and many of them had rich hangings of cotton, coney wool, or feather-work. Ten men live in this palace, but there were 1,000 women in it, and some say 3,000, which is most likely.\*

"The houses of the poorer people were small, poor and mean, but small as they were they commonly contained two, four and six families."

The dispatches of Cortez describes the entertainment at the dinner of Montezuma, as follows:

"Every day as soon as it was light, 600 nobles and men of rank were in attendance at the palace, who either sat or walked about in the galleries and passed the time in conversation. The servants and attendants stayed in the courtyards. The meals were served by three or four youths, who

\* Hist. Amer., Vol. II., p. 361.

brought in an innumerable number of dishes of flesh, fruits, and everything that the country produced. The meals were served in a large hall in which Montezuma was accustomed to eat."

Cortez also states :

"The great city is situated in this salt lake, from the main land to the densest part the distance is two leagues. There are four entrances to the city, all of which are formed by artificial causeways, two spears length in width. The city is as large as Seville or Cordovia; its streets are very wide and straight; some of these are half land and half water, and are navigated by canoes. All the streets at intervals have openings through which the water flows, crossing from one street to another; and at these openings, some of which are very wide, there are also very wide bridges, composed of great timbers of great strength; on many of these bridges ten horses can go abreast. The city has many public squares in which are

situated the markets and other places of buying and selling. One square is twice as large as the city of Salamanca, surrounded by porticoes, where are daily assembled more than 60,000 souls, engaged in buying and selling; and where are found all kinds of merchandise that the world affords, embracing the necessities of life, as, for instance, articles of food, as well as jewels of gold and silver, lead, brass, copper, tin, precious stones, bones, shells, snails, and feathers. There is a building in the great



STOCKADE VILLAGE IN CANADA.

square used as an audience house, where ten or twelve persons, who are magistrates, sit and decide all controversies that arise in the market.

"The great city contains a large number of temples or houses for their idols, very handsome edifices. In the principal ones, religious persons of each particular sect are constantly residing, for whose use, beside the house containing the idols, there are other convenient habitations. All the sons of the principal inhabitants, both noble and respectable citizens, are placed in the temples, and wear the same dress, from the age of seven or eight years until they are to be taken out to be married. Among the temples there is one which far surpasses all the rest, whose grandeur of architectural details no human tongue is able to describe, for within its precincts, surrounded by a lofty wall, there is room enough for a town of 500 families. Around the interior of this enclosure there are handsome edifices containing large halls and corridors, in which the religious persons attached to the temple reside. There are full forty towers, which are lofty and well built the largest of which has fifty steps leading to its main body, and is higher than the tower of the principle church at Seville. There are three halls in this grand temple, which contain the principal idols; these are of wonderful extent and height, and admirable workmanship; adorned with figures sculptured in stone and wood; leading from the halls are chapels with very small doors, to which the light is not admitted, nor are any persons, except the priests, and not all of them.

NOTE—One of the cuts represents the stockade village called "Hochelaga," formerly situated where Montreal now stands. There is another cut which is very common, which represents the stockade fort in which the Iroquois found refuge at the time Champlain attacked them. Other engravings have been given by other artists—Wyeth and DeBry. These, however, differ from the plate, which represents the village as confined to a single great-house; the apartments in the house being occupied by individual families, but the different parts of the pueblo being occupied by the various clans, the whole village being under control of one chief, who was elected by the clans.



"This noble city contained many fine and magnificent houses, which may be accounted for from the fact that all the nobility of the country who are vassals of Montezuma have houses in the city, in which they reside a certain part of the year.

"Along one of the causeways that led into the city, are laid two pipes, constructed of masonry, each of which are two paces in width, and five in height. An abundant water supply is conveyed in these pipes and distributed about the city. The whole city is served with water, which they carry in canoes through all the streets for sale, taking it from the aqueduct. In the streets and public places of the city I have seen daily laborers waiting for some one to hire them. The inhabitants of the city pay a great regard to style in their mode of living, and are more attentive to elegance of dress and manner than in other cities, as Montezuma has his residence in the capital. There are fortified places in all the provinces garrisoned with men, where there are also stationed governors and collectors of the rents and tribute.

"Within the city the palaces are so wonderful, that it is impossible to describe their beauty and extent. There was one palace somewhat inferior



CITY OF MEXICO.\*

to the rest, attached to which was a beautiful garden, with balconies extending over it, supported by marble columns, and having a floor formed of jasper, elegantly inlaid. There were apartments in this palace sufficient to lodge two princes of the highest rank, with their retinues. There were likewise belonging to it, ten pools of water, in which were kept the different species of water birds found in this country, of which there is a great variety, all of which are domesticated; for the sea-birds, there were pools of salt water; for river birds, pools of fresh water."

Here, then, we have a description of the City of Mexico by different writers, the most of whom were eye witnesses of the scenes. There were, to be sure, certain writers who greatly magnified the size and elegance of the cities, among whom was Cortez himself. Still, if we take them all together and compare the accounts which were written, it will be very easy to

\*The cut represents the City of Mexico rebuilt by the Spaniards. It was on the same site as the old city, and many of the buildings now mark the sites of the old temples and palaces



see that there was a great difference between the so-called cities of Mexico and the pueblos of New Mexico, and still more difference between them and the villages of the Gulf states. These latter villages were marked by pyramid mounds and were surrounded by ponds of water, and resembled in these respects the cities of Mexico; but no one of a candid mind can say that they represent the same stage of progress, or the same condition of society.

There were villages on the Northwest coast which were ruled by chiefs, who received their authority from the mythologic divinities, whose symbol or totem was placed upon the houses of the village, each village being under the protecting care of an animal divinity, from whom the ancestral chief had received the power to establish the village and rule in the name of the divinity. It was their religion rather than political organization which gave authority to the chiefs. Riches were a standard of power. Three classes existed in society: the ruling classes, who belonged to the family of the chief; the middle classes, who constituted the residents of the village, and the slaves who were owned by the families. Dr Boaz says:

It must be clearly understood that the natives do not consider themselves descendents of the totem. The legends correspond almost exactly to the tales of the acquisition of the manitou among the eastern Indians. Each clan derives its origin from a mythical ancestor, who descended from the heaven, or arose from out the ocean. In all cases where the clan name or tribal name was a collective form of the name of the ancestor, we may assume that the group once formed a single community. We conclude that the clan was a village community. Each clan developed a clan tradition which is founded upon the acquisition of a manitou, the manitou becoming hereditary to the clan. This manitou became embraced in a crest. The clan was so organized that a certain number was recognized. The ancestor of each of these families has a tradition of its own, aside from the general clan tradition. He has certain crests and privileges of his own. There is only one man at a time, who impersonates his ancestor. The individuals personating the ancestors form the nobility of the tribe. At all festivals they sit in the order of the rank, which is, therefore, called "the seat of the person." The order of the seats at a festival was given by a deity of the tribe, at a time when the animals were able to speak. At the festivals masks were often worn which denoted the ancestors of the tribe.

In Mexico and Central America the difference between the classes was as marked as on the Northwest coast, and may have come from the same source. There were deified kings in Central America and Peru just as there were in Egypt. The sun worship which prevailed in all these countries had a tendency to increase the powers of the kings and priests.

Now, we have dwelt upon this description of the village life of the Northwest coast because of the light that is thrown by it upon the ancient cities of Mexico and Central America. It is a common belief that these cities were inhabited by people, who originally came from the Northwest coast and carried with them something of the same system which prevailed there: an opinion which is confirmed by the study of the religious and

civil institutions of these southern countries. In the cities as well as in the villages farther north, the position of the chief and the ruling classes, depended in part upon their wealth and natural descent, but mainly upon the mythology which had been transmitted, for there seems to have been a mythological ancestor to all the ruling classes, and the power of the kings was largely owing to an inheritance.

There are, to be sure, no such totem poles among the cities of the Southwest, as are seen in the villages of the Northwest; nor are there the same crests or royal ensigns, and the symbols of power present considerable contrast. Still, we find sculptured columns in front of the palaces resembling the carved totem posts; also sculptured serpents which resemble the double-headed serpent found on the Northwest coast, showing that the same conception ruled in both regions. We



AQUEDUCT NEAR TEZCOCO.\*

find, also, that there were seats carved in the solid rock in Mexico and Peru. They were designed as the place in which the priest and ruling families sat at festivals and religious ceremonies. In Central America, where there were no rocks which could be used for the purpose, the seats were placed on the top of buildings called gymnasiums, which were erected for the purpose and were occupied by the families of the nobility while the games were celebrated.

This is an important point, and it is confirmed by the art products of the region, especially by the sculptured columns. Whether there are any connecting links between these two extremes of the western coast remains to be ascertained by

\*The aqueduct at Tezcoco was used for conducting water from the mountain across the valley to the city. The height of the embankment shows the amount of labor expended upon it.

further explorations, and yet it is worthy of notice that the religious ceremonies of the Pueblo tribes of the interior have some elements which remind us of those which were common in these widely separated regions.

There were, however, great contrasts between the architecture of the cities and the pueblos, for the communistic houses called pueblos were built up in successive stories, the lower story having no doorways, but the upper stories were occupied by the "cacique," the stories between by the common people. The provisions for the household were kept in the lower story. The reason for this form of building is to be found in the necessity for defense against the attack of the prowling foe, as the lower story presented a dead wall and the only means of reaching the people was by climbing up the wall.

1. There were no such buildings at the Southwest, for, while the palaces were erected upon artificial pyramids, they were generally of a single story in height, and were covered with many architectural decorations in the form of sculptured figures.

2. The sculpture upon the walls formed a great contrast to the plain walls which characterized the pueblos. There were, to be sure, sculptured figures on the fronts of the houses of the Northwest coast, which resemble those of the Southwest, but no such figures are seen in the pueblo region.

3. The towers were common in the cities of the Southwest, which in some respects resembled those found among the pueblos, but they were generally used for religious purposes, and were placed upon artificial pyramids and represented a form of Nature worship, while the towers among the pueblos were used merely as lookout stations.

4. The temples or religious houses were in great contrast. There were kivas among the pueblos which were used for religious assemblies, but these were placed generally beneath the surface of the rocks, instead of above them, and were places where the men gathered at night and made them places of resort; whereas, the temples were too sacred for the common people to enter.

5. The social organization of the two regions was very different. In the pueblo region all were on a level, but in the Southwest the kings and royal families were supported by the common people, who cultivated the lands set apart for the support of the royal family and for the priests, who dwelt near the temples.

6. There were, also, many other features embodied in the city, which are not found in the clan village or pueblo. Among these, was its division into wards; each ward had its own temple and retinue of priests, and its own subordinate officers, though all were connected with the central point, where was the chief temple, or "teocalli," and adjoining it was the palace of the king and the apartments in which he received the guests, as well as other apartments in which his wives and the servants had their abode.



7. In Mexico, the support of the cities depended not so much on the communistic state and clan organization, as on the system of contributions, which came from the tributes of the clans around the city. The gathering of these contributions rested on the responsibility of the local chiefs, who had direct control of the industry of the people. The outlying districts and landed estates, did not belong to individuals, as in modern society, but to entire clans, and yet the clans were obliged to pay tribute to the chief, who was virtually the king.

8. The augmentation of the city was brought about by two different methods: one was by bringing the members of the tribes to dwell in the city; another was by sending out warlike expeditions who should overcome other cities. The best of the land was taken from the resident chiefs and peasantry and vested in some Mexican warrior as a proprietary estate for life, generally transmissible to his sons.

9. The people who dwelt upon the land followed their pursuits under the direction of the priests, who held the calendar stone in their hands, and so interpreted it that the employments were timed by them. This gave the kings and priests great power, and kept the common people subject to their control, as the superstition of the people was so great, that they supposed that the very elements were under the control of the priests, and that the seasons came and went at their bidding, the calendar stone being the chart from which the priests learned the will of the supernatural beings. Every child that was born, was brought to the priest who could prognosticate the future of his life, by studying the position of the stars on the day of the child's birth. Thus the system of mythology which prevailed in the Old World prevailed here, and it kept the people in abject servitude. The system of government has been compared to the feudal system, and the cities have been compared to the castles of Europe. The Spanish historians were so impressed with the resemblance, that they gave names to the rulers and officers, as well as to the temples and palaces, with which they had been familiar. They pictured the king and the priest as dwelling even in more elegance and having more power than the kings and priest of Europe in the Middle Ages.

This was true not only of Central America and Mexico, but also of Peru. The City of Mexico was, to be sure, overthrown by a small army of Spaniards, but it was because the neighboring tribes had become alienated and incensed by the king and priests, who had so frequently made incursions upon them and taken prisoners from their midst and offered them as victims of sacrifice upon the summits of the great temples or Teocalis. But the writings of all historians show that this city was approached over causeways, which extended for miles in three directions, and was surrounded by great walls and gateways, and furnished with canals and aqueducts and many of the

conveniences of a modern city. Other cities, also, were situated in the midst of the lake, and still others on lands adjoining, making the beautiful valley to present a scene to the eyes of the astonished Spaniards, which was unequalled by any other in the world. The names of these various cities are all known and their localities may be identified. Their ruins have been explored, and are studied with great interest at the present time, and the more they are studied, the more astonishing they become. The descriptions of the archæologists confirm the accounts written by the historians, and at the same time show the great contrast which existed between the cities of the Southwest and the villages and pueblos of the interior. The following description is by Brantz Meyer:

The inland sea was an archipelago of wandering islands, and the whole city was penetrated throughout its entire length by its principal street, which was intersected by numerous canals, crossed by draw bridges and lined upon either side by stone buildings which rose among beautiful gardens or foliage. The quadrangular palaces of the nobles were spread over a wide extent of ground, embellished by beautiful fountains, which shot their spray amid porticoes and columns of polished porphyry. The royal gardens are described as spots of unsurpassed elegance, adorned with rare shrubs, supplied by aqueducts and fountains, wherein, among beautiful flowers, fishes and aquatic birds are seen floating. The great temple was the most interesting structure in the city. It stood in a large area surrounded by a wall eight feet high, sculptured by serpents in relief. Its area was paved with smooth polished stones, and the pyramid, which arose in its center, seems to have been constructed as well for military as religious purposes, inasmuch as its architecture made it fully capable of resistance as a citadel; and we may properly assume this opinion as a fact, from the circumstance that the enclosing walls were entered by four gates facing the cardinal points, while over each portal was erected a military arsenal filled with immense stores of warlike implements. \* \* \*

The teocalli is known to have been a pyramid, over 120 feet in altitude, with a base of 320 feet. A procession ascending was obliged to pass around it until it came to the corner immediately above the first flight, where it came to another set of steps. It was necessary to pass around it four times and ascend five stairways. On the paved and level area at the top, they found a large block of jasper, the peculiar shape of which showed that it was the stone on which the bodies of the unhappy victims were stretched for sacrifice. Its convex surface, rising breast high, enabled the priest to perform more easily the diabolical task of removing the heart. Besides this, there were two sanctuaries erected on the level surface of the teocalli: two altars, glowing with fire that was never extinguished, and a large circular drum, which was struck only on occasions of great public concern.\*

The comparison between the cities of America with those in the various lands of the East, will be very instructive, especially if we study their earliest condition and the various stages through which they passed. It will be found that there are many resemblances, as all grew up out of the villages in which clan organization was prominent, but the most of them had changed their mode of government before the days of history, though they retained many features which had previously existed, especially the power of the priesthood and the division of the territory.

\* See "Mexico: Aztec, Spanish and Republican," by Brantz Meyer; page 39; also plate.

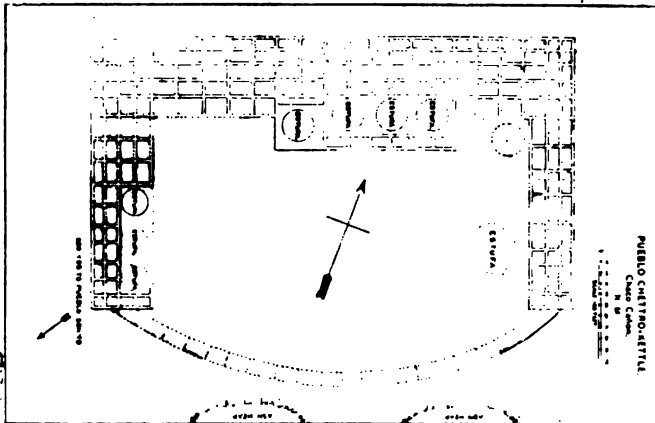


Fig. 25—Detailed plan of Pueblo Ethel

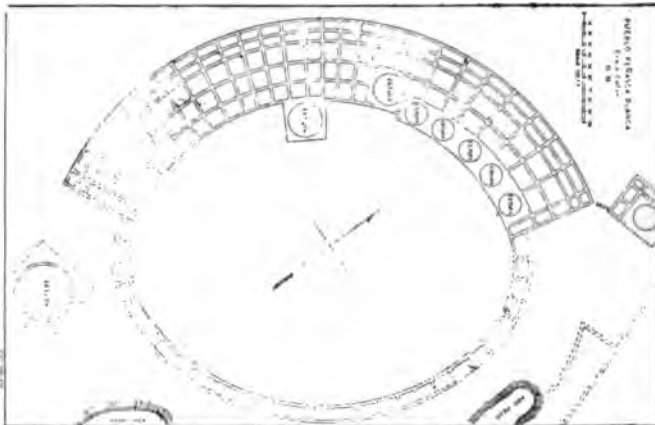


Fig. 26—Detailed plan of Pueblo A-Ethel

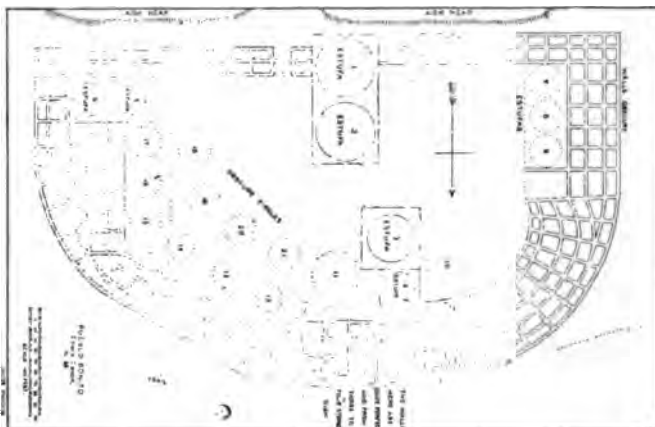
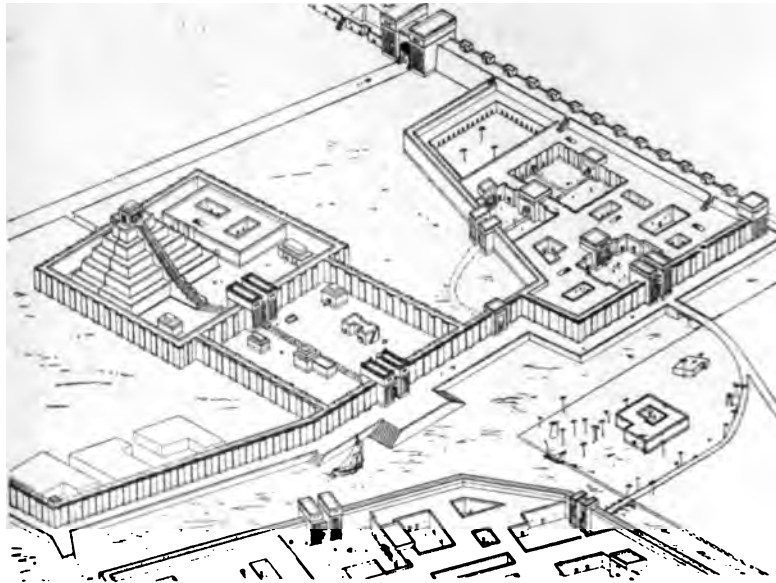


Fig. 27—Detailed plan of Pueblo B-Ethel

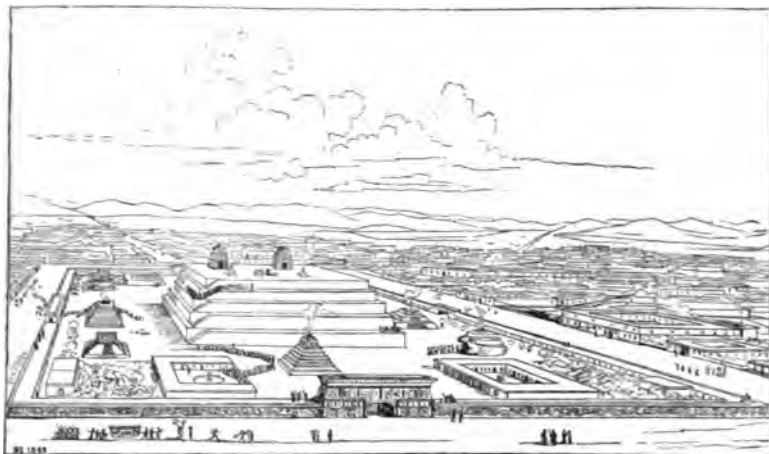
# **PUEBLOS IN CHACO CANYON, NEW MEXICO.**

These pueblos are single buildings, with many apartments. In Mexico the buildings are all separate.





TEMPLE AND PALACE IN BARYLONIA.



TEMPLE AND PALACE IN THE CITY OF MEXICO.

We learn from the Scriptures that four kings of Babylonia led an expedition into Syria and overcame the cities which were in the valley of Siddim. Four kings fought with five, one of whom was Amraphael, who afterwards became the king of Nations; he is now called Hammurabi. This shows the character of the cities of the East at that early date. The same narrative illustrates the contrast between the kings who ruled in the cities and the nomadic chiefs who led their flocks in the open country. Abraham rallied his retainers and overcame the conquerers, recovered the spoils and returned; but when Melchizedek, king of Salem, came forth to meet him, the patriarch gave him tithes. This shows that the same general system prevailed at the East, in Babylonia and Syria, as that which prevailed in some parts of our own land at the time of the Discovery.

At least the four cities situated in the valley of the Tigris may be compared with the four quarters of the City of Mexico. Mr Morgan says:

Each of them was occupied by a body of people more nearly related among themselves, than to the inhabitants of the other quarters. Presumptively each lineage was a phratry. Turning to the kindred tribes of Tlascalans, the same facts nearly reappear. Their pueblo was divided into four quarters, each occupied by a lineage; each had its own head war chief, its military costume, its standard and blazon. The land tenure of the Aztec gentes is also significant \* \* \*

Clavigero remarks "that the lands were divided into as many parts as there were districts in the city, and every city held its own part entirely distinct from every other." These lands could not be alienated by any means whatever. The element of kin united each community. \* \* \* It is an interesting fact that the functions of a priest were attached to the office of principal war chief, and, it is claimed, those of a judge.

It will be found in comparing these cities with those in America, that they were all organized after the same general plan. The city was a confederation. It was not an assemblage of individuals, but a confederation of several groups, which were established before it was, and which were permitted to remain. The mode of founding ancient cities was very different from that which prevails at the present time. If we examine the city in primitive times, we find it divided into tribes, curies, or gentes, and families. If we look at the people when assembled, in the early stage of Rome, we see them voting by curies and gentes. If we look at the worship, we see six vestals, two for each tribe. The city of Rome was divided into three parts, according to the tribes. The Athenian citizen formed a portion of four distinct secular societies; he was a member of a phratry, a tribe and a city. A man enters at different times into three relations: first, as a child he is a member of the family, by the religious ceremony; some years later he enters the phratry, by a new ceremony, a rite of initiation; finally, at the age of 16 or 18, he was admitted as a citizen of the city. He becomes a citizen by a religious ceremony. At the altar before the victim of sacrifice he takes an oath, by which he binds himself to.

respect the religion of the city. Every family had its god and its altars, its chief and priest. When Pausanias visited Attica, he found in the little villages traditions and customs which had been perpetuated with worship. These traditions informed him that every little burg had had its king, before Cecrops became king of Athens. The number four was also sacred. We find that in the traditions the four villages of Marathon united to adore the Delphic Apollo. The men of the Piræus united in a temple to Hercules. In the course of time these little states were combined, and formed twelve confederacies. The Celtic clans had each its hereditary chiefs, who were its priests and judges. Thus it was in Greece and Rome the village grew into the city through the change of government and the influence of religion.

Afterward, when men began to perceive that these were common divinities, they were united in groups. There were common names which expressed the fact. *Urbs* was the place of assembly, the dwelling place of the sanctuary. *Civitas* was applied to the government—religious and political. The first care of the founder was to choose the site for the city, this was often done by consulting the oracles. The Greek consulted the oracle of Delphi; the Samnites followed the sacred animal; the Latins watched the flight of birds, the eagle lighting upon a cactus was the sign that led to the founding of the City of Mexico.

The founding of the city was attended with religious ceremonies. Romulus dug a small trench around the city, he set up an altar and lighted a fire; a clod of earth was thrown into the circle. The altar typified the hearth, around it the city arose as the family gathered about the hearth. Romulus traced a furrow, with a copper ploughshare drawn by a bull and a cow; it was a sacred act. The furrow was too sacred to leap over. Remus leaped over the furrow and was slain by his brother.

Romulus was worshipped as a god. Eneas was a high priest of Troy, and when the city was destroyed he took his household gods with him. Worship was the bond of society, and just as the altar held the family together, so the temple held the people of the city. One collective group was the palace; another was a temple enclosed within a court; another was its corps of priests and the vestal virgins. Such was the case in Peru, and the study of the ruined structures proves it was also the case in Central America and Mexico.



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COLUMN VI.



## DISCOVERIES IN THE EAST—KING MENES.

The new historical discoveries in the ancient East crowd one upon another in a way that is really astounding. The announcement of them when made is hardly understood, except by the professed archæologist.

The two first dynasties with the names of the kings given by Manetho, or found on the Table of Abydos, the incredulous Egyptologists had agreed to call mythical and unhistorical; but now the names of several kings of these dynasties have been found by de Morgan and Amelineau, and the very grave and bones and seal of Menes; and Menes calls himself the King of Upper and Lower Egypt.

These discoveries, as at present interpreted, give us the following conclusions: we first knew Egypt as inhabited by a people living in the Stone Age. This has its bearing on the race of the earliest settlers of Babylonia, who were probably a darker race than the Semites of Arabia, from one of whose settlements, in Ur of the Chaldees, Abraham came to Canaan. This mixed race built the pyramids and developed the art which produced the temples of Luxor and Karnak; and their descendants thousands of years later carried their conquests back as far as the banks of the Euphrates.

We observe that the old biblical tradition is again supported, that human civilization had its origin in the Euphrates Valley. We might have expected that Moses and the Hebrews would have told us that Adam and Eve were in Egypt; but Genesis is right in sending us further off to Southern Babylonia for the origins of history. We have come very close to the beginnings of history, which means the beginning of writing. Back of writing there is no history, only geological periods. How far back writing and history go we cannot yet measure, but new discoveries are every year helping us approximate to the time. The best we can now guess is that history may be traced back some four to five thousand years before Christ, not very different from the Mosaic chronology.

We desire that America shall have her full part in making these discoveries. Some of the latest and most important in the valley of the Euphrates have been made by the expedition sent by the University of Pennsylvania, with which the names of Drs. Peters, Hilprecht and Haynes were connected.

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## THE BATTLE OF KADESH.

The first series contains a volume on "Semitic Languages and Literature," "Comparative Religions and Comparative Philology." From the volume given on "Semitic Languages" we have received "The Battle of Kadesh," a story of the oldest military strategy, by James H. Breasted. It contains 48 pages, quarto; seven large plates, folded, representing the scenes in the battles; also eight maps. This Battle of Kadesh



was pre-Hellenic in date. It occurred between the forces of Rameses II. and the Hittites 1400 B. C. The scenes throughout are depicted on the walls of the great temples. Rev. H. G. Tompkins studied the battle, and Maspero's account in the "Struggle of the Nations" was written without studying the text or records or hieroglyphics. The poem of "Pentaur," a brief record, and the temple reliefs are the chief sources of information. The conditions which led up to the battle are on the Amana Tablets.

The armies of early Egypt were not large, not exceeding 30,000; the Hittites about 20,000. The locality of the battle was on the Orontes, where are the remains of an extensive ancient city, which consists of columns and various portions of the wall, and a mound. The mound was described by Dr. Robinson.

The Lake of Kadesh is the Lake of Homs; it did not exist in Ramses' day. Kadesh itself was located at the most important cross-roads in Syria—the roads from the interior to the sea and from Syria southward. The plain around Kadesh was the best possible place for a battle with chariots. The armies changed positions on this plain. In the fifth position Ramses was cut off from the mass of his army. This division was struck hard by the Asiatic chariots, but Ramses himself charged the Hittites. Infantry arrived. Ramses leads six assaults, and held his scanty forces together during three hours' combat. When evening drew on, the enemy took refuge in the city, and the battle was over and Ramses was saved from entire defeat. The poem claims that Ramses was victorious, so that the Hittite king sued for peace.

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#### BATTLE OF FALLEN TIMBER.

One of the most important events in the history of the Mississippi Valley was that which is depicted in the plate which accompanies this note, "The Battle of Fallen Timbers." It had been preceded by the defeat of General Sinclair, and the consequent alarm which was felt by the white settlers of the entire region. The only settlement which remained undisturbed was that occupied by the French at Kaskaskia.

General Anthony Wayne had had much experience in the Revolutionary War, and was always a courageous fighter and aggressive in his ways. He was called Mad Anthony because of his method of conducting a battle. It was a fierce attack which he made upon the Indians and by which he drove them from their covert in the midst of the fallen timber, and broke them into separate bands of Indians, so thoroughly discouraged that they were never united again in battle. The pictures well represent the effect of the victory, for, while one represents the battle, with its dangers; the other represents the beautiful valley, where all is peace and quiet.

BATTLE OF THE FALLEN TIMBER.





PRESENT VIEW OF THE SITE OF THE BATTLE.



The book which contains the account of this battle is illustrated by these and other plates. If it had no other merits, it would be valuable on this account. The scenery is certainly very attractive, and much more beautiful since peace reigns, than when the battle was raging and when unseen dangers kept the early settlers from making improvements. If the battles of the revolution secured peace for the states situated along the Atlantic coast, so that the improvement of the country began from that date; the battle which occurred at Fallen Timber in 1794 secured a peace which has since remained, and the progress of the country has steadily gone on since the event; the only disturbance which occurred being the one during the Black Hawk War.

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#### BROOKVILLE, INDIANA.

Brookville, Ind., is one of the most remarkable places in the United States. It is a little village, which has never cut any figure in the commercial world, and was not reached by any railroads till very late in its history and never has had any very prominent educational institutions, and yet it has sent out more men who have become noted for their ability, accomplishments and general usefulness, than many another place a hundred times as large. These men, if classified according to their profession and sphere of life, may be enumerated as follows: Gen. Lew Wallace, Gen. Ambrose Burnside, Gens. Heckleman and Short of the Confederate army; among the great artists, Hiram B. Powers may be mentioned; among the great engineers, Mr. Eads, the constructor of the great bridge at St. Louis and works at the mouth of the Mississippi River; among the authors, Gen. Lew Wallace and Mrs. Wallace, the wife of the general, Maurice Thompson, Joaquin Miller, Capt. Wm. Herndon, and J. B. Clarkson. The place figured conspicuously in history at an early date, and was visited by persons who were well known, though they were not born or educated there. Among these may be mentioned Daniel Boone, Simon Kenton, Geo. R. Clark, and Gen. Wm. Harrison.

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#### ELEPHANT REMAINS IN MEXICO.

From the City of Mexico comes a statement bearing the signature of Dr. Nicholas Leon, archæologist of the National Museum of Mexico. The signature would justify the belief that proper investigation of the facts related has been made.

The one great fact is that an ancient city, which was located near the present town of Paredon, in the state of Coahuila, some 500 miles north of the City of Mexico, was suddenly destroyed in some past age by an overflow of water and mud, and that its remains are still existent on the spot. Many mas-

sive walls have been found, but they are covered with a mass of deposited earth, sixty feet in thickness. And mingled in this earth are human skeletons, the tusks of elephants, etc., distributed in a way which indicates that the overflow of water and mud was sudden, giving no time for escape.

The account which has fallen under our notice is somewhat brief. We cannot vouch for its accuracy, and simply present the report:

"Portions of buildings, so far unearthed, show that the city—at least the largest of the cities were covered by the *débris* of the flood, there being at least three cities destroyed—was very extensive. The indications are that there were many massive structures in the fallen city, and that they were of a class of architecture not to be found elsewhere in Mexico. According to the estimates of the scientists under whose directions the excavations are now being made, the city in question had a population of at least 50,000.

"The destruction which was brought by the flood was complete. All the inhabitants of the cities were killed, as well as all the animals. Skeletons of the human inhabitants of the cities and of the animals are strewn all through the *débris*, from a depth of three feet from the surface to a depth of sixty feet, showing that all the *débris* was deposited almost at once. Measurements show that the *débris* is on an average, sixty feet deep where the largest of the cities stood.

"Most remarkable of the minor finds that have been made at Paredon is that of the remains of elephants. Never before in the history of Mexico has it been ascertained positively that elephants were ever in the service of the ancient inhabitants. The remains of the elephants that have been found at Paredon show plainly that the inhabitants of the buried cities made elephants work for them. Elephants were as much in evidence in the cities as horses. Upon many of the tusks that have been found were rings of silver. Most of the tusks encountered so far have an average length, for grown elephants, of three feet, and an average diameter at the roots of six inches. Judging from the remains of the elephants so far unearthed, the animals were about ten feet in height and sixteen to eighteen feet in length, differing very little from those at present in existence."

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[Now, these statements in reference to the elephants' bones found among the ruined cities need confirmation, before they are accepted by the majority of archaeologists. It is true that the tusks and bones of mastodons are frequently found in the swamps of Michigan, Ohio, and Indiana, but they are supposed to belong to the same species which are found in the frozen mud of Siberia and the gravels of the Northwest coast. A species covered with hair and adapted to the cold climate, and quite different from any that would be found as far south as Mexico. The circumpolar regions are full of these creatures,

which have perished, but their bodies have been preserved in the ice-beds. Other animals, such as the buffalo and bison, have over run portions of this continent, since the days of the mastodon, but none of them reached as far south as Mexico.

The cities of Mexico are supposed to have been built not earlier than 1500 A. D.—about 500 years ago. If any were built earlier, they are in ruins, but no remains of elephants have been discovered among the ruins, in fact no semblance of the elephant has been recognized in the sculpture, except in a few cases, where what resembles an elephant's trunk, or the trunk of a tapir, is found on the sculptured columns at Copan. The discovery of elephant bones would be too important a matter to be ignored, but the article seems sensational and has been sent to the newspapers as a sensational item, and not to the scientific societies, so far as we have learned.

The whole subject of the presence of the mastodon on the American continent is discussed in the August and September numbers of *The Records of the Past*. The arguments which favor a recent date are: first, the presence of the bones in the peat swamps of Ohio and Michigan; second, the drawing on the Mercer tablet of an elephant attacked by Indians; third, the figure of an elephant on a pottery pitcher from the cliff-dwellings. All these are, however, outside of Mexico, and so prove nothing in reference to this sensational report.—ED.]

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### EDITORIAL NOTES.

#### THE ORIENTAL EXPLORATION FUND.

The University of Chicago has received gifts which will enable it to carry on explorations and excavations in the Orient for a period of ten years. The responsibility is vested in the Department of Semitic Languages, which will organize for this work under the title, "THE ORIENTAL EXPLORATION FUND OF THE UNIVERSITY OF CHICAGO," with President William R. Harper as the General Director. A firman has been granted by the Turkish Government permitting them to excavate at Bi miyeh, identified by Dr. Peters as the site of the ancient Nisin or Isin, and work will be undertaken immediately on this site. Bismiyeh is thirty-five miles southeast of Nipur, where excavations have been carried on so successfully for fifteen years under the auspices of the University of Pennsylvania. The Director of the Babylonian Section will be Dr. Robert Francis Harper, Professor of Assyriology in the University, and Dr. James H. Breasted, Associate Professor of Egyptology, will be the Director of the Egyptian Section. Later on it is hoped that a third section may be organized to explore and excavate in Syria. Arrangements will soon be made to form a society in connection with THE ORIENTAL EXPLORATION FUND.



## THE HAMMURABI CODE.

The University of Chicago Press will publish about January 1, 1904, an edition of the Code of Hammurabi, which will contain a map; the text of the Code in 82 plates, a sample of which we print with their permission; a Transliteration and a Translation; a Glossary; Lists of Deities, Temples and Cities; a List of Signs and Diagrams found in the Text; and Indices. The text has been edited and reconstructed from the photographs published by Scheil, and is the first to appear.

This edition of this famous Code is intended for students and laymen interested in Historical Jurisprudence, History, Antiquities, Archæology and Old Testament Criticism. It is edited by Dr. Robert Francis Harper, Professor of the Semitic Languages in the University of Chicago and Director of the Babylonian Section of the Oriental Exploration Fund of the University of Chicago, about which we shall have further information for our readers in the next number of this journal.

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## AMONG THE MAGAZINES.

*Littels Living Age* has an article on "Animal Intelligence."

*The World of To-Day* has a large number of illustrated articles of varied character.

*Polynesian Society Journal* for June, 1903, has an article by Elsdon Best on the "Art of War."

*McClure's* for October is a very beautiful number. The best article is by Lefarge. The engravings are especially fine and quite artistic. It also contains an illustrated article on the "Zuyder Zee."

*Education* for October has an article on "King Arthur's Legends in the Hands of Poets"; another on the "Flowers of Tennyson—Palms, Thorns, Willows, Merigolds, Mosses, Flags, Lilics, Ivys, Lindens, Lime, Larch, Daisies, Thistles, Elms and Cedars."

*The Atlantic Monthly* continues to furnish splendidly written articles. It furnishes the best model of style and intellectual culture, and ought to be taken by every scholar in the land, for the unconscious effect it will produce on clearness of thought and expression.

*American Journal of Archæology* for July, 1903, has a description of the cave at Vari, by Chas. Heald Weller, in four parts, with many plates and inscriptions. The cave was discovered in 1765, but has been recently explored. There are stone steps leading down to it. Within it are several figures, seated and standing, representing the shrine of Apollo. Dedicatory inscriptions and figures in marble relief were found. The pottery contained in it, is the common Attic ware, such as has

been found in Cyprus, about 460 B. C. Terra-cotta statuettes, also coins dating about 395 B. C. and lamps were discovered. The find does not carry back the date very far, and yet it is an interesting one.

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#### AMONG FOREIGN JOURNALS.

The *Hibberd Journal* published by Williams & Norgate, London, Vol. II, No. 1, October, 1903, has an interesting article on "Babylon and the Bible," by Rev. Canon P. K. Cheyne, D. D.; also, "From Agnosticism to Theism," by Rev. C. F. Dale, and "Doctrinal Significance of a Miraculous Birth," by Rev. C. E. Beeby. It is a very valuable journal, and is destined to take a high rank.

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#### BOOKS RECEIVED.

"A Short History of Mexico," by Arthur Howard Noll. Published by McClurg Co., Chicago.

"Ohio: First Fruits of the Ordinance of 1787," by Rufus King. Published by Houghton, Mifflin Co., Boston.

"Laos of North Siam," by Lillian Johnson Curtis. Published by the Westminster Press, Philadelphia.

"Virginia: A History of the People," by John Esten Cooke. Published by Houghton, Mifflin Co., New York.

"Dutch Founding of New York," by Thomas A. Janvier. Published by Harper Brothers, New York.

"How George Rogers Clark Won the Northwest," by Reuben Gold Thwaites. Published by McClurg Co., Chicago.

"The Bible in Brazil," by Rev. H. C. Tucker. Published by Fleming Revell Co., Chicago.

"Narrative of a Visit to Indian Tribes on the Purus River, Brazil," by Joseph Beal Steere. Ann Arbor, Mich. Published by Smithsonian Institution, U. S. Nat. Museum, Washington.

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#### ARCHÆOLOGICAL NOTES.

ROCK HEWN DWELLINGS are very numerous in Palestine, also in Spain and Cyprus.

HITTITE FINDS. Thirty-four large boxes of Hittite archæological relics have been sent from northern Syria to the Royal Museum in Berlin.

THE EGYPTIAN GEOLOGICAL SURVEY has discovered an animal allied to the elephant, showing the appearance of a big rhinoceros, similar to remains found in Wyoming.

THE study of comparative religions is bringing up the subject of the serpent in Genesis, the brazen serpent, Aaron's rod that budded, and many other items mentioned in the Scripture as survivals of old Pagan systems and mythology.

EGYPT.—Explorations have been conducted at Beni Hassan by John Garstang; at Abydos, by Petrie; at Oxyriuchus, by Grenfell and Hunt; at Thebes, by Mr. Davis; at Gizeh, by Mr. Ballard, and at Girzeh, by the University of California.

COL. YANCAE has lectured before the Berlin Geographical Society on his excursions through Asia Minor, including Cilicias, the battle ground between Alexander the Great and Darius; also the sites of Smyrna, Perganus, Ephesus, and Troy, and the passes mentioned by Xenophon are described.

"MYSTERIES OF MITHRA" is the title of a book by Krauz Dumont, published by the Open Court Publishing Co., Chicago. Very much more is made of the mysteries of Mithra than they deserve. Mythrism was the rival of Christianity, and prevailed in Persia, but never went beyond that land and died a natural death. Christianity has extended throughout the world.

THERE is little doubt of the robbery of the Indians by the great land companies. Secretary Hitchcock, however, shows that most contracts for the purchase of their land below its real value have been returned by the department without approval, and the purchasers have either paid a higher price, all that the land seemed to be worth, or there has been no sale. This is all the department can do under the foolish land laws of Congress. But the Indians are no more fit to make a bargain than children. Their land, a sufficient tract for each family, should be made inalienable unless needed for public use, in which case it should be condemned by the government, and the Indians paid, not money down, but only the interest on the principal for two or three generations.



## BOOK REVIEWS.

### **THE ARAPAHO SUN DANCE; THE CEREMONY OF THE OFFERINGS LODGE.**

By George A. Dorsey, Curator Department of Anthropology, Field Columbian Museum. Publication 75, Anthropological Series, Vol. IV. Chicago: June, 1903.

This is a welcome addition to the literature of a subject about which much is said and little has hitherto been known from personal observation. Dr. Dorsey gives an elaborate description of the ceremony as witnessed by him in the years 1901 and 1902, accompanied by illustrations of its most important features, reproduced from photographs, with colored figures to show the paints and markings used in the course of the dances, altogether 137 in number. As the title indicates, the Sun Dance is a ceremony of the Offerings Lodge, and it is performed in pursuance of a pledge or vow made during sickness, lunacy or danger of some kind, or in case an individual sees the Offerings Lodge in a dream or vision which is repeated until the pledge is given. According to the Origin Myth given towards the end of the volume, the Offerings Lodge was instituted by the Arapaho creator, the owner of Flat-Pipe, for the cure of his boy, who became sick and lost his flesh. The lodge was prepared by himself and wife, aided by the birds and beasts. It lasted four days and nights, and the boy was healed. This was before people had multiplied, and when this took place, the owner of Flat-Pipe told them how to conduct the ceremony, the object of which is, in the words put into his mouth, that "their days may be brighter, that there may be abundance of vegetation, that through the merits of Flat-Pipe we may be protected from plague"; in other words, to insure peace, plenty and health.

There are certain objects which are essential to the Sun Dance ceremonial, things around which its performances turn. Such are the Rabbit Tipi, the Sweat Lodge and the Offerings Lodge, with the Sacred Wheel, the Buffalo Skull, and the Altar. The symbolism of these various objects is of the greatest interest to us, and this has not been lost sight of by Dr. Dorsey. The name "Rabbit Tipi" is said to have arisen from the myth which makes rabbits conduct the secret ceremonies of the Offerings Lodge. No one is permitted to enter the Rabbit Tipi with a covering on the feet. Moccasins are used to catch bats in, and hence they become the home of the bat, which represents the evil spirit. Removal of the foot covering is, therefore, an exclusion of evil. Probably we have here reference to the opposition between evil and good, darkness and light.

The erection of a special Sweat Lodge appears not to be absolutely necessary as part of the Sun Dance ceremonial, as the purification rites can be gone through in the ordinary Sweat Lodges. It was erected, however, for the 1902 ceremonial, and Dr. Dorsey would seem to have passed through the ordeal of the bath. He states that the circular excavation inside the Sweat Lodge, where the heated stones are placed, is called "Opened Brains," referring to an Arapaho myth. The hole "inside of this excavation, in which the incense is placed, is the navel of the mother; it is the place of our birth, the sipapu of the Hopi, the earth representing the mother. The incense which is placed on the navel is offered to the Four-Old-Men, for the reason that they are constantly watching, in winter and summer, and during the day and night. They control the wind and cause it to blow according as they feel sympathy." The sweat bath is taken "to be cleansed from former sins, evil desires, and be protected from all kinds of plagues, etc."

When the introductory rites have been performed and the Offerings Lodge is ready for use, the Rabbit Tipi is abandoned. The account given by Dr. Dorsey of the capture of the centre-pole and of the building of the Offerings Lodge is very interesting. In the detail of its construction reference is constantly made to the legends current among the Arapahos, for

the particulars of which reference must be made to the book itself. A curious explanation is given of the use of the two ceremonial colors, red and black, the former of which refers to the sun and the latter to the moon. The central feature of the Offerings Lodge would seem to be the altar, the erection of which is attended with much ceremony. Near it are placed the buffalo skull and the sacred wheel, both of which play a very important part. The skull is supposed to be looked upon as the dwelling place, during the ceremony, of Man-Above. It is painted symbolically and has grass boles in the nose and eye sockets to represent the water monster Last-Child. The wheel represents the sun, but the actual band of wood is said to represent a harmless water-snake and by association the water that surrounds the earth. The four inside markings of the wheel, and also its four clusters of feathers, represent the Four-Old-Men, or gods of the four world quarters, also Summer, Winter, Day and Night. The red color is symbolical of the Arapaho, and the black symbolizes the earth. "As a whole," says Dr. Dorsey, "the Wheel may be said to be symbolic of the Creation of the world, for it represents the sun, earth, the sky, the water and the wind." The wheel is enveloped in many wrappings of calico, buckskin, &c., but under certain circumstances is unwrapped by the keeper. This is usually when a vow has been made by some individual, that if Man-Above will grant him some desire he will "wrap the wheel." The new wrapper thus provided has to be placed next to the wheel. The vows to the Wheel are said to differ in no essential respects from those made for fasting in the Sun Dance ceremony, and they are preferable, as they involve no personal suffering. The ceremony performed in 1901 was pledged by a man to get rid of some mental derangement, and in the midst of the excitement caused by the wild dancing, the singing and whistling that forms so large a part of the performance, the wheel was brought into use for his benefit. The Lodge-Maker, as the man is called, held the wheel from time to time toward the centre-pole. He appeared to be overcome with emotion. His breast moved violently and his face was contorted into violent grimaces. Then one of the participants went behind the Lodge-Maker, took the wheel, and after making four passes toward him placed it on his head, resting it on his shoulders. The Lodge-Maker then with his right hand waved and shook a buffalo tail in a ceremonial manner. The wheel was then removed from his head and placed on a limb of the cedar tree, which projected behind the buffalo skull. We are told that "by the waving with an outward lifting motion of the wheel toward the centre-pole, the Lodge-Maker calls the attention of the Father, asking him to look down, while the placing of the wheel over the Lodge-Maker's head, is to say, "My Grandfather, I take on, I receive the good of your gift for myself and for all." This may be regarded as the culmination of the whole ceremonial, although the dancing which goes on for three days, during which the dancers take no food, is the most exciting part of the ceremony. When the exhibition ended happily, a great shout went up and every one rejoiced. The dancing is performed for the purpose of obtaining some benefit, and it is termed "Gambling against the Sun." At its conclusion, all exclaimed, "Thanks! we have obtained our desire." The dancers are all painted in symbolical colors and designs, and a special feature of Dr. Dorsey's work is its colored illustrations of the use of the various paints.

There are several other points which deserve attention, such as the prayers offered to the Father, Man-Above, and the relation between the "Transferrer" and the wife of the Lodge-Maker. As to the latter point, it is evident that one of the ceremonial rites has been much modified from what it was originally, and the participants gave Dr. Dorsey every opportunity to see its present form. Moreover, one of the original and most striking features of the Sun Dance ceremonial was evidently entirely wanting in 1901 and 1902. Under the head of torture, the author refers to piercing the ears and the sacrifice of human flesh, but he says nothing as to the dragging of buffalo skulls by cords attached to the shoulders, a form of torture described by Catlin. Curiously enough, a case of this kind has occurred since the date of the publication of this work, which the Field Columbian Museum authorities deserve great credit for bringing out.

**ANTHONY WAYNE.** By John R. Spears. New York: Appleton Co. 236 pages. Price, \$1.

The part which Anthony Wayne performed in the war of the revolution forms the greater part of this volume. A single chapter is given to the period between the two wars, and two chapters only are given to the wars on the frontier. We are led to see that Anthony Wayne was next to Washington in many of the movements and battles, and was always the same bold fighter and aggressive leader throughout all. He never lost the confidence of the commander-in-chief. He is better known for his exploits in war with the Indians, especially in the battle of Falling Timbers.

The plates illustrate the scenes of the battles and add much to the value of the book. It is unfortunate that better paper was not used, for otherwise the volume would be very attractive.

**LOST MARAMECH AND EARLY CHICAGO.** By J. F. Stewart. Chicago: Fleming Revell Co. 390 pages. Price, \$2.

This volume shows great industry on the part of the author, and much familiarity with western scenes, especially with the particular locality where the author first lived. The only fault to be found with the book, is that the author makes the narrative revolve about the wrong center. One can hardly believe that a little unknown place called "Maramech," situated somewhere between Chicago and Peoria, was the center of all the paths and routes of the Indians before the white man came. Still, the range of view includes the whole country as far north as the Fox River, and as far west as Tomah in Iowa.

The book contains a great deal of information about the Indian tribes. This includes the Indian trails, the Indian villages, location of the different Indian tribes, and the order of the events in history. The publishers have very wisely illustrated the book by a large number of valuable plates; some of which represent the forts, wigwams, canoes, and relics of the Indians; others are portraits of chiefs, of dancers, of prominent women and children. There are also many maps in the book, and a beautiful frontispiece. It is a very attractive book and written in an interesting style.

**THE MONARCH BILLIONAIRE.** By Morrison I. Swift. New York: Ogilvie & Co. 317 pages. Price, \$1.

This volume makes the rich men of our country the fierce objects of attack, and is in reality a screed, rather than a fair statement of the situation. The author hurts his case by his bitterness. It is a pity that a young man, who has been so thoroughly educated and so well trained in his home, should be so twisted and warped by his studies of social questions and business life. A man uneducated, as John Mitchell is, has a thousand fold more influence than an educated man who loses his balance, for he actually is trusted by both parties, while the other man grieves his own friends and alienates those who would otherwise side with him. The greatest calamity that can happen to a man is to lose faith in God and humanity, for he comes to a point where he thinks his mission is to hit hard everything he sees and imagine that the way to restore the balance of affairs is by this means. The world has rolled on and still holds its poise because there was an unseen hand to guide it. Peace and prosperity are at the end of the path, and serenity is a virtue.

**PILGRIMAGES TO METHODIST SHRINES.** By William Henry Meredith. New York: Jennings & Pye. 330 pages.

The object of this book is a worthy one, and comes under the line of effort which is interesting to the antiquarian. The Methodist shrines are not as conspicuous as one might think, for after reading the book of 300 pages or more, it would be difficult to point out any shrine which can at all



compare with those which have marked the history of many of the great men of the world, such as Walter Scott, Shakespeare, Hawthorne, Lowell, Longfellow, and others. In the case of John Wesley himself, it was not to be expected, for he was constantly moving from place to place, and had no local permanent habitation, though he had a great name. The bridal home of Charles Wesley has been discovered.

Gloucester, called the "Sunday School city," was made famous by Robert Raikes. In the city of Bristol is a church in which Whitfield preached, but John Wesley preached in the open air; and so Bristol is no more of a shrine than is the "Savannah Oak" in Georgia, where Whitfield preached.

John Wesley's first circuit included the old jail called "Newgate." A three deck pulpit is referred to, but only one deck remains. An old eight day clock has been found, but it is hardly a shrine. Ancient Roman baths are points of antiquarian interest and the ancient abbey is substantial. The bust and grave of Beau Nash, the dude, may still be seen, but the memory of John Wesley needs no monument to perpetuate his name.

The great Adam Clark was appointed to the Bristol circuit, but there are very few substantial monuments that are reminders of his presence. The "foundry" in London was the place where John Nelson preached. Wesley's house in London and the road chapel still stand. In "Bunhill Fields" the dust of the Cromwells, of John Bunyan, Daniel De Foe, Isaac Walton, and Susannah Westly, may be found beneath graves that have become noted shrines.

A picture of a vessel in full sail, on a Vermont farm house, made sailors of three sons of that home. Good Methodist books lying upon the table will win many a boy and girl to the church, so the shrines are really in the homes of good people, rather than in distant places.

Plymouth Rock and Old South Meeting House, along with Bunker Hill Monument, are places to which pilgrimages are made, and so compare with Christ Church and Carpenter Hall and Liberty Bell in Philadelphia. The lesson which the book teaches, after all, is "It is better to preserve the monuments which we have, than it is to hunt those which we have not."

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OHIO: FIRST FRUITS OF THE ORDINANCE OF 1787. By Rufus King. Supplementary chapter by Theodore Clark Smith. Boston: Houghton, Mifflin Co.; 1903.

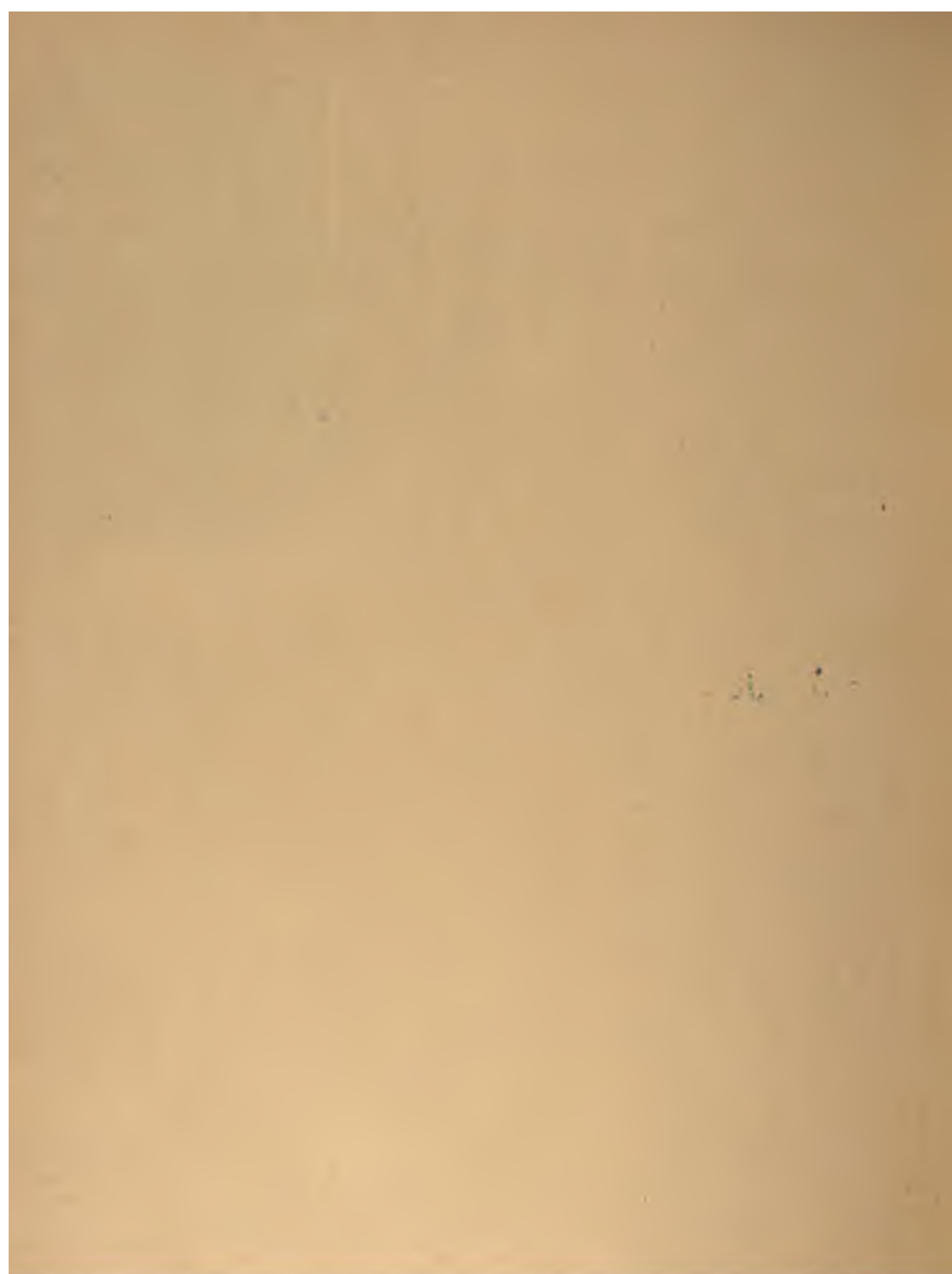
This is the best book of the history of Ohio, so far published. It is very comprehensive; is written in a concise and clear style, and brings out the facts in an interesting way. One chapter is devoted to the mounds and archaeological relics and the prehistoric location of the Indians; another to La Salle and his explorations; another to the British conquest. The story of the Moravians is told. Formation of the Northwest territory, the early settlers, Dr. Cutler, Gens. Putnam, Symmes, Harmar, St. Clair's administration and defeat are subjects discussed.



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